DOCUMENT RESUME

ED 036 143 EF 004 109

TITLE	THIRTY ONE OLD SAN FRANCISCO SCHOOLS UPDATED. HOW OUTMODED BUILDINGS CAN BE ECONOMICALLY REVITALIZED TO HOUSE EVERCHANGING EDUCATIONAL NEEDS OF OUR YOUTH.
INSTITUTION	CORLETT AND SPACKMAN, ARCHITECTS, SAN FRANCISCO, CALIF.
PUB DATE	69
NOTE	51P.
AVAILABLE FROM	EDUCATIONAL FACILITIES LABORATORIES, NEW LIFE FOR OLD SCHOOLS STUDY, SUITE 1734, 20 N. WACKER DRIVE, CHICAGO, ILLINOIS 60606
EDRS PRICE	EDRS PRICE MF-$0.25 HC NOT AVAILABLE FROM EDRS.
DESCRIPTORS	*CONSTRUCTION PROGRAMS, *FEASIBILITY STUDIES, FLEXIBLE FACILITIES, MASTER PLANS, *SCHOOL BUILDINGS, *SCHOOL CONSTRUCTION, SCHOOL DESIGN, *SCHOOL IMPROVEMENT, SCHOOL PLANNING

ABSTRACT

THIS REPORT EXPLORES THE FEASIBILITY OF PHYSICALLY AND EDUCATIONALLY UPDATING 31 OF SAN FRANCISCO'S VINTAGE SCHOOLS BY STUDYING THREE OF THEM IN DEPTH AND APPLYING THE CONCEPTS AND UNIT COSTS THEREBY DEVELOPED TO THE REMAINING 28. DIAGRAMMATIC LAYOUTS AND PHOTOGRAPHS ACCOMPANY THE FACILITY ANALYSES. THE APPROACHES TO UPDATING SUGGESTED IN THE THREE IN-DEPTH STUDIES ARE INTENDED TO BE BROAD ENOUGH TO BE APPLIED TO THE OTHER 28 SCHOOLS, WITH FLEXIBILITY AND ADAPTABILITY REPLACING INHIBITING RIGIDITY. (FS)

ED036143

THIRTY ONE

OLD

SAN FRANCISCO

SCHOOLS UPDATED

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

EF004 109

How outmoded buildings can be economically revitalized to house ever-changing educational needs of our youth

This report is based on the results of a study conducted in San Francisco in cooperation with the "New Life for Old Schools" project of The Research Council of the Great Cities Program for School Improvement. The Great Cities Research Council is an organization of the school districts of the large cities of the United States whose primary purpose is to conduct studies of unique problems faced by the Great Cities in their efforts to meet the comprehensive public school needs of their citizens. The original study and the publication of this report was made possible by a grant from Educational Facilities Laboratories, Inc.

Both phases of the San Francisco project were coordinated by Ben E. Graves, formerly school facilities project director for The Research Council and now consultant on the staff of EFL and its director of the continuing "New Life for Old School" project.

Additional copies of 31 OLD SAN FRANCISCO SCHOOLS UPDATED can be obtained from Educational Facilities Laboratories, New Life for Old Schools Study, Suite 1734, 20 North Wacker Drive, Chicago, Illinois, 60606; or Office of Educational Information, San Francisco Unified School District, 135 Van Ness Avenue, San Francisco, California, 94102.

THIRTY ONE

OLD

SAN FRANCISCO

SCHOOLS UPDATED

HOW OUTMODED BUILDINGS CAN BE
ECONOMICALLY REVITALIZED
TO HOUSE EVERCHANGING
EDUCATIONAL
NEEDS OF OUR YOUTH

PREPARED FOR
THE SAN FRANCISCO UNIFIED SCHOOL DISTRICT

BY
CORLETT AND SPACKMAN AIA
ARCHITECTS
SAN FRANCISCO, CALIFORNIA

PROJECT PARTICIPANTS

SAN FRANCISCO UNIFIED SCHOOL DISTRICT

ARCHITECTS:

CORLETT AND SPACKMAN AIA
San Francisco

William Corlett F.A.I.A.
Partner in Charge

Robert J. Ernsberger, Architect
Project Coordinator

Donald R. Millar, Architect

James Davenport

CONSULTING STRUCTURAL ENGINEERS:

SHAPIRO AND OKINO
San Francisco

CONSULTANT AND PROJECT COORDINATOR:

Ben E. Graves
EDUCATIONAL FACILITIES LABORATORIES, Inc.
"New Life for Old Schools" Project
Chicago, Illinois

ADMINISTRATIVE STAFF

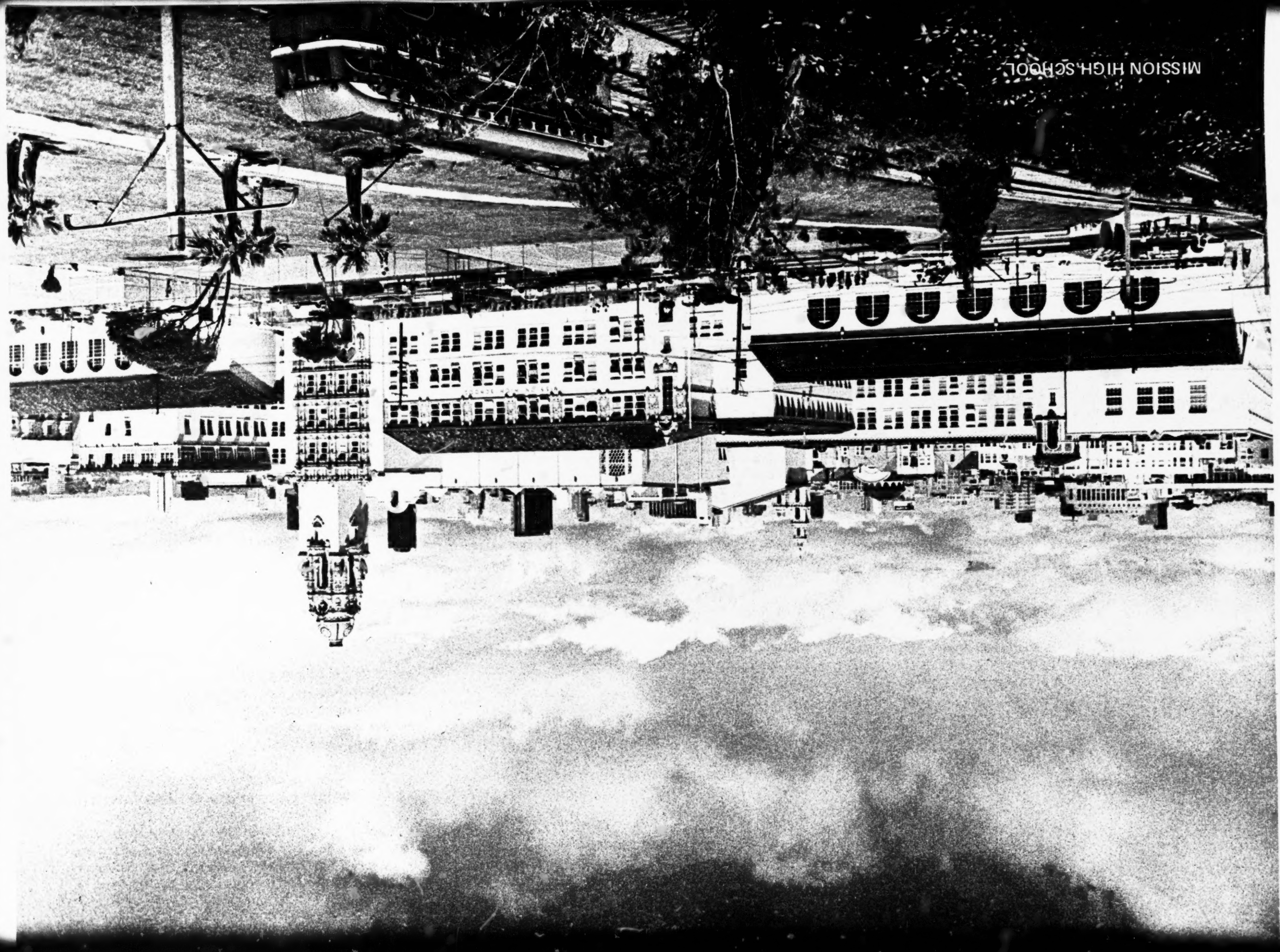
ROBERT E. JENKINS
Superintendent of Schools

Joseph P. McElligott	General Administrative Officer
Wilbert G. Vestnys	Assistant Superintendent, Building and Grounds
James Morena	Supervisor, Building Maintenance and Rehabilitation
Philip Cali	Supervisor, Building Maintenance and Repair
Edward D. Goldman	Associate Superintendent, School Operational Services
Donald A. Rhodes	Assistant Superintendent, Elementary Education
Theresa Mahler	Director, Children's Centers
Ralph Kauer	Assistant Superintendent, Secondary Education
Myron Moskovitz	Supervisor, Secondary Education
James Dierke	Assistant Superintendent, Adult and Occupational Education
Martin Dean	Assistant Superintendent, Special Educational Services
Lewis Allbee	Assoc. Supt., Educational Planning, Research, and Development
Isadore Pivnick	Asst. Supt., Innovative Planning
Raymond J. Pitts	Asst. Supt., Instructional Development and Services
George Canrinus	Coordinator, Health, Physical Education, Athletics, and Recreation
Jess E. Rathbun	Coordinator, Industrial Arts
Herbert Simon	Director, Art
Kathleen McGillicuddy	Director, Homemaking
Albert A. Renna	Director, Music
William B. Sanborn	Director, Instructional Materials
Harold Weeks	Director, Research and Program Evaluation

ADMINISTRATORS OF PROJECT SCHOOLS

Harold A. Zimmerman	Principal, Balboa High School
James Kearney	Acting Principal, Galileo High School
Walter J. Odone	Assistant Principal, Galileo High School
Leslie Burke	Assistant Principal, Galileo High School
Harry M. Krytzer	Principal, Mission High School
Mary B. Lins	Assistant Principal, Mission High School
Beverly H. George	Assistant Principal, Mission High School
Nathaniel H. Brooks	Principal, Polytechnic High School
Steve Ebert	Asst. Principal, Polytechnic High School
Henry Barsotti	Principal, Aptos Junior High School
Carl H. Hanson, Jr.	Principal, Everett Junior High School
Lane E. DeLara	Principal, Francisco Junior High School
Bert Mason	Asst. Principal, Francisco Jr. High School
Frank R. Verducci	Principal, Horace Mann Jr. High School
Cornelius M. Murphy	Asst. Principal, Horace Mann Jr. High
William Galant	Principal, James Lick Jr. High School
Fred Hanson	Asst. Principal, James Lick Jr. High
George Karonsky	Principal, Portola Jr. High School
William P. Cashman	Asst. Principal, Portola Jr. High School
Julian Reinhertz	Principal, Presidio Junior High School
Walter S. Nolan	Principal, Roosevelt Junior High School
Carlos V. Cornejo	Act. Asst. Principal, Roosevelt Jr. High
Thelma Boyer	Principal, Alamo School
Robert J. McInnis	Principal, Alvarado School
Helen R. Bell	Principal, Andrew Jackson School
Caesar J. Orsini	Principal, Commodore Stockton School
Christine L. Bianco	Principal, Dudley Stone School
John W. Whisman	Principal, Edison School
Marion S. Maginnis	Principal, Emerson School
Joseph A. Stallone	Assistant Principal, Geary School
Ruth Peabody	Principal, Grant School
Gerald J. Foley	Assistant Principal, Grant School
Lucille K. Baker	Principal, Hawthorne School
Leola M. Havard	Principal, John Muir School
Stella Rosenberg	Principal, Lafayette School
Leonard Flynn	Act. Principal, Le Conte School
Felix Duag	Principal, Raphael Weill School
Mary Connolly	Principal, Sanchez School
Mary J. O'Farrell	Principal, Sherman School
Alice Gerstenberg	Principal, Sunnyside School
Benjamin W. Pulsifer	Principal, West Portal School
Duncan H. Hodel	Principal, Winfield Scott School

MISSION HIGH SCHOOL



INTRODUCTION

The nation's urban school systems are in trouble today, in part, because the educational process is housed in old, outmoded, overcrowded buildings on small sites that, in most cases, preclude expansion.

Abandonment or replacement is seldom achievable financially, politically or logistically.

School buildings, 30 to 50 plus years of age, designed for the bygone era of the self-contained classroom, inhibit today's teaching-learning techniques and mournfully lack the visual, sonic, thermal and aesthetic environmental qualities technologically achievable in recent years.

UPDATING then becomes the logical subject for exploration. Uniquely in California, the State Legislature has enacted measures which require all public school districts to structurally investigate their school buildings and to then effect reconstruction that will bring them into compliance with building requirements having to do with physical safety during earthquakes.

The San Francisco Unified School District, in cooperation with the "New Life for Old Schools" study, has undertaken to define the reconstruction work necessary to bring their non-conforming buildings into compliance with state law, AND concurrently, to ascertain the feasibility of putting new life into 31 of their schools that appear to be receptive to UPDATING because of their medium age and type of construction.

PURPOSE OF THIS REPORT

A master plan for education, the logical starting point for any feasibility study, is currently under development by the San Francisco Unified School District.

They do, however, know and vigorously state that they want all of the technological improvements observable in newly constructed schools and they demand that flexibility and adaptability of space be maximized to accommodate the only certainty in education: change.

With this guidance, the feasibility architects and engineers have thoroughly examined the assigned schools, researched trends in education nationally, in cooperation with the District's administration, developed an education program to reflect these trends, and prepared a concept for updating Mission High School, Roosevelt Junior High School and John Muir Elementary School, the three facilities designated for study in depth.

The purpose of this report then, is to explore the feasibility of UPDATING 31 of San Francisco's vintage schools by studying three of them in depth and applying the concepts and unit costs thereby developed, to the remaining 28.

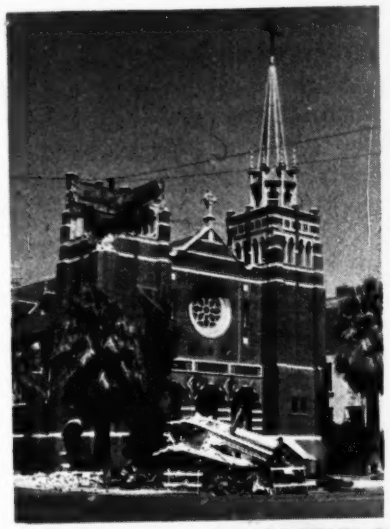
It is not implied that the layouts presented constitute the only solution to updating. Rather, it is suggested that these solutions will allow many others, even reverting to the highly committed and limiting configuration now existant.

1906 SAN FRANCISCO CITY HALL

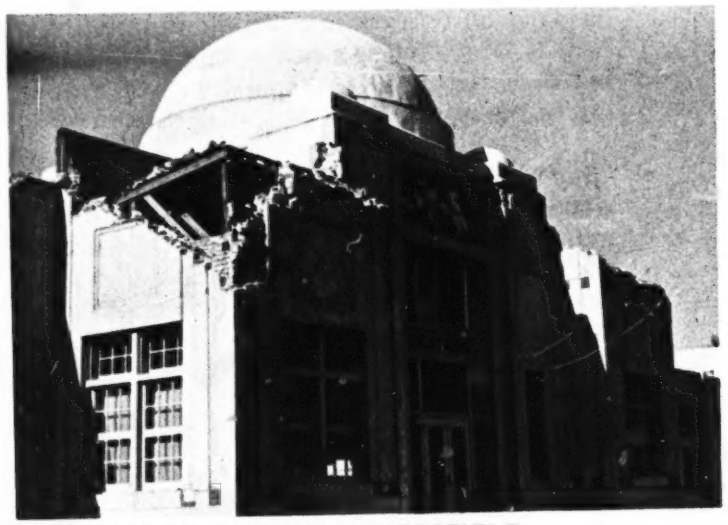
1925 WILSON SCHOOL, SANTA BARBARA

1925 FRANKLIN SCHOOL, SANTA BARBARA

1933 JEFFERSON JR. HIGH, LONG BEACH

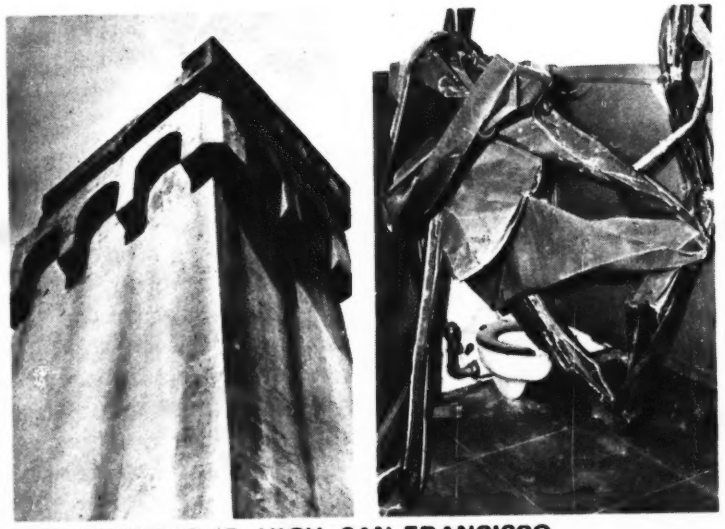


1952 CHURCH, BAKERSFIELD



1952 FREMONT SCHOOL, BAKERSFIELD

1964 WEST ANCHORAGE HIGH SCHOOL



1957 PRESIDIO JR. HIGH, SAN FRANCISCO

1968 HAKODATE UNIVERSITY, JAPAN

HISTORY OF EARTHQUAKE DESIGN

Long prior to the San Francisco earthquake in 1906, Californians have somewhat uniquely suffered from seismic forces, as they will in the future. Little was done to protect the individual in public assemblage until the Long Beach earthquake in 1933, when the State Legislature enacted laws (now commonly known as the Field Act) governing the design of school house buildings to resist seismic (lateral) forces. Constructing "earthquake-proof" buildings is impossible, but incorporating certain structural elements to prevent structural failure is well within reason, and every public school building constructed in the state since then incorporates such features. Because the Field Act was not retro-active, little was done until 1967 to require that schools constructed before enactment conformed. In 1967, the Legislature passed Assembly Bill 450 which defined the liability of School Board Trustees and outlined specific actions required to avoid such liability. The bill includes provisions that a Board must direct that a structural survey be made and estimates prepared for the reconstruction or rehabilitation of these schools and a report filed with the State Bureau of School Planning before January 1, 1970. There are various provisions for raising the required funds, and an inclusion of intent that all deficient pre-1933 school buildings will have been repaired or replaced by 1983. A motion to initiate a contract for the Structural Survey of three of the 31 schools covered in this report was passed by the San Francisco Unified School District's Board of Education in November 1968. This report on environmental rehabilitation is complimentary to and supplements the structural surveys. The 31 schools discussed in this report were constructed of reinforced concrete prior to 1933, and have not been brought in conformity with prevailing law since.

Photographs at left depict typical damage to buildings during the 1906, 1925, 1933, 1952 and 1957 earthquakes in California, the 1964 earthquake in Alaska, and the 1968 earthquake in Japan. The San Francisco earthquake in 1957, considered minor, was the strongest and most damaging shock the area had suffered since 1906. Appreciable damage was found in only 11 of the then 125 public school facilities. A few plaster cracks occurred at James Lick Junior High School, where two weeks prior, maintenance crews had removed loosened stone facing of the parapets. Unanchored cast stone ornamentation at the top of a chimney at Presidio Junior High School fell through a skylight and into an unoccupied rest room, demolishing the metal partitions.

NEW TRENDS IN EDUCATION

Great strides have been made in educational innovations in the last 20 years, and there are indications that changes will come at an even faster pace in the future. Often a school is out-dated before it is occupied. In fact, it is almost impossible to predict the physical requirements of a school just five years in the future. New schools must provide the most flexible and adaptable facilities possible in order to function at all in the future.

There are many experimental schools employing a variety of educational innovations. It is unfortunate that most lack a critical evaluation and little effort has been made to compare evaluations and to isolate advantages and disadvantages. Predictions must remain general but it is safe to assume that there will be more and more emphasis on individual self-motivation. Instruction may someday be limited to teaching the student how to be curious, how to probe, how to research and how to solve his own problems and answer his own questions. It is obvious that electronic learning aids will be more and more evident even to the point of replacing all classroom teaching. Teachers may well become counselors and tutors.

To accommodate the above, it is essential that educational facilities be planned to include flexible partition systems, floor to floor heights and clear spans capable of accommodating spaces to house large groups of students, easily accessible spaces for installation of a variety of future conduits, acoustical qualities compatible with audio-visual equipment, and a heating and ventilating system with 100% coverage in order that rooms may be located without respect to windows.

Team teaching efforts have been inaugurated in many schools already in which as many as 100 students gather for a lecture or audio-visual program and then disperse into groups of as few as four, or even one student to pursue special knowledge. The day of the 30 student class is past and there is a definite need for schools to contain a variety of sizes of learning areas. Sizes of groups gathered for instruction can vary so quickly, even during a class period, that every mode of adjusting room sizes must be employed, from large openings in carpeted areas through folding doors, panel type or coiling operable partitions to relocatable partitions. Since supervision of student requirements may change little, there will be need for glazed areas in most of the partitions, particularly those of smaller spaces where a group of students may undertake an unchaperoned discussion. Sufficient acoustical absorption such as carpeting and ceiling treatment can eliminate the need for corridors as such, allowing corridor space to be reclaimed for instructional purposes. When flexible scheduling develops further, there will be little justification for 12 and 16 foot wide corridors adjacent to every learning area. In order for new or rehabilitated facilities to accommodate future educational techniques, it is vital that compromises not be made to this criteria in determining economic feasibility.

Another trend will be student participation in laboratory type activities for all curriculum areas. Rows and rows of seating will disappear, except in large group instruction areas, and be replaced with work benches, conference tables and light-weight chairs and stools (even floor cushions) quickly and quietly adaptable to a variety of seating arrangements.

Most important to the above-mentioned trends is the inclusion of resource materials centers. The student will be free of the rigid scheduling of today and the inflexible study assignments. He will set his own study pace and seek his own resources. Thus the resource materials center will be the focus of the entire school with all means of learning aids available to the student—audio-visual devices, films, tapes and records, data retrieval systems, models, constructions; as well as books, charts, pamphlets, magazines and newspapers. The resource materials center should be designed so that all of these facilities are available to students and teachers alike, even non-enrolled members of the community; and spaces must be provided for their use, either individually or in groups. Resources will be so vast that it will be compulsory for a student to take an indoctrination course in their uses.

"Educational Change and Architectural Consequences", a recent report from Educational Facilities Laboratories, documents current trends in education and includes the following exerpts, which are extremely pertinent in the context of this report:

- "Team teaching, the use of teacher aides, programmed learning, instructional television, filmed courses, new curricula, non-grading, independent study, the encouragement of creativity, improved professional training, better techniques for evaluation—these and half a dozen new or newly emphasized ideas seem worth attention and perhaps adoption."

- " 'A schoolhouse is a box filled with equal sized little boxes called classrooms,' wrote one educator in a passage which has become the touchstone of reform in school design. 'The architecture sorts the children. It helps the administration to establish groups of uniform size—25 pupils if the community is rich, 35 if it is poor, and 50 if it doesn't care. In each box is placed a teacher who will be all things to all children all day all year. If it be a secondary school, bells will ring to signal the musical chair game that is played a half dozen times a day as groups exchange boxes'."

- "To put new teaching and learning procedures into actual effect in a particular school always comes down to logistics. An educational innovation must not only be conceived, understood, and adapted at the policy level—it must be designed to work in a specific situation. And here is where many a school administrator has felt thwarted because 'the building wouldn't get out of the way'."

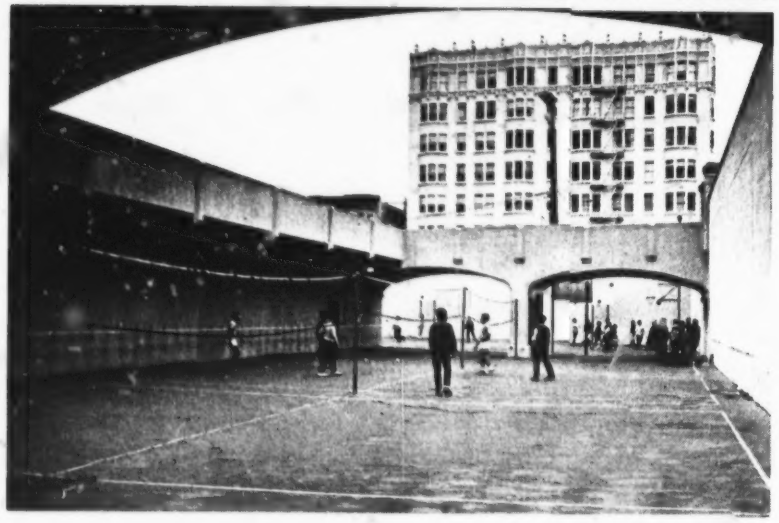
- "Such innovation doesn't come cheap, and when introduced piecemeal, primarily to save money, often becomes a cropper. On the other hand, the new ways of education are not necessarily expensive ways. Building a program for each student, for instance, doesn't mean a vast increase in staff or space, but rather a relocation of staff or space."

- "Old walls should not stifle new ideas. Identical boxes must not enforce the same program on all students and all teachers; each is a unique individual. Fixed furnishings must not quash spontaneous inquiry. Dismal, spiritless, and uniform decors must not blight a child's creativity."

- "Say 'school' to almost anyone, and you conjure up the mental picture of a rectangular room that encloses a teacher facing approximately 30 pupils. It is hard to think of many significant occasions when people group themselves in this way outside of education. In business or the professions, people work alone; or they talk things over with someone else; or they confer in groups of three or four up to a dozen or so; or they join large audiences—numbering hundreds, sometimes more—for exposition or demonstration."

COMMODORE STOCKTON ELEMENTARY SCHOOL

HORACE MANN JUNIOR HIGH



SAN FRANCISCO'S VERSION OF THE URBAN SCHOOL PROBLEM

San Francisco's existing public schools were consistently over-built on exceedingly small sites which required two to five story compact buildings and allowed inadequate outdoor spaces for physical education and landscaped areas. Their sloping terrain dictated split level designs and extensive retaining walls to provide terraced level outdoor areas.

Although it never snows and seldom freezes in San Francisco, the climate is brisk, at times windy and foggy, and is a factor in developing effective use of outdoor areas.

The thirty-one schools in this study exhibit many similarities of plan because they were built to house a rigid and highly committed educational program and were designed, largely, by the City Architect's office.

Architecturally, the schools might be characterized as "California Mission" in that there is extensive use of handsome tile roofs, glazed terra cotta applied decoration, and stucco over concrete.

The Senior High Schools boast large sloping floor auditoriums with balconies and highly sophisticated stages but suffer from intolerable acoustics. Overly large corridors and grand lobbies contribute to the presently insufficient use of available space. Ample space is assigned to gymnasiums, locker and shower rooms, shop, science, and homemaking but areas for arts, crafts, music, and the performing arts are quite limited.

The Junior High Schools generally parallel, facility-wise, the High Schools, exhibiting well-equipped science rooms, homemaking complexes and industrial arts areas.

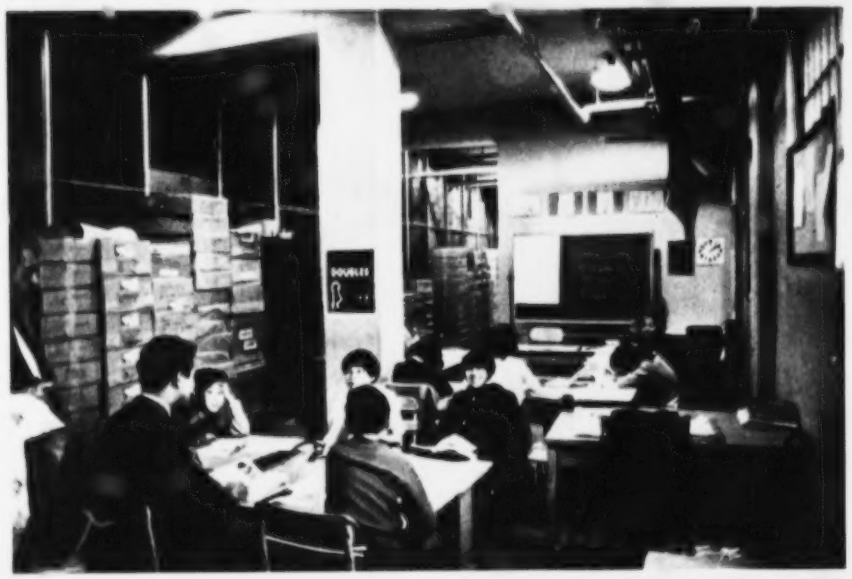
Although the roof areas of many of the schools were designed to supplement playground space, they are seldom used.

The Elementary Schools typically consist of two kindergarten rooms, an "opportunity room", self-contained classrooms with coat room, a multi-use flat-floored auditorium, with modest stage, library, cafeteria and administrative space.

The following general statements are applicable to all of the 31 schools considered in this study:

MUSIC ROOM

TYPICAL CORRIDOR

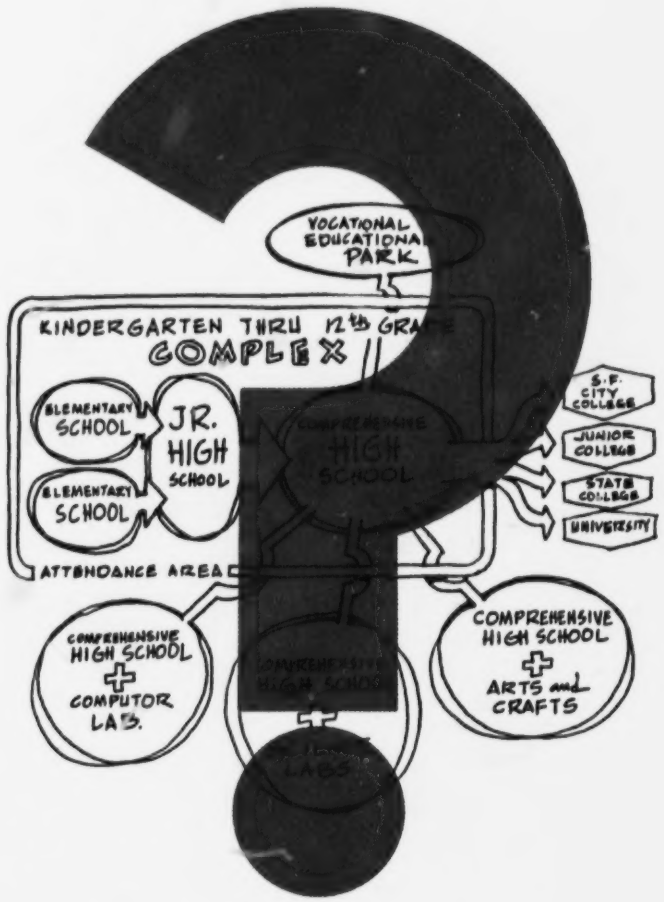


STORAGE AREA

1. All schools comply with the laws governing safety from fire and panic in that exits are properly marked, panic hardware exists on all exits, fire excapes abound, and the facilities include fire sprinklers where required.
2. Nearly 70% of the classrooms in this study are illuminated with outmoded incandescent lighting.
3. Heating systems consist of gas fired boilers providing steam or hot water to radiators. There is no mechanical ventilation or air conditioning existent except in a few inside storage areas which have in some cases become teaching spaces.
4. Plumbing fixtures are outmoded.
5. Some "modernization" work has been accomplished systematically over the years, primarily in the form of token acoustical treatment on ceilings, installation of new resilient flooring, and periodic painting of virtually anything that doesn't move.
6. It is interesting to observe that a number of the old schools studied contain crude movable walls that have been sealed shut, precluding flexible use of space.
7. The schools lack adequate administrative and counseling offices and storage rooms.
8. Existing libraries are consistently small, especially in light of today's varied and dramatic resource materials.
9. Teacher preparation rooms and lounge areas exist in improvised form only.
10. There are no designated student study areas.
11. Student project areas are very limited outside of normal laboratories.
12. All classroom spaces are designed for limited use such as stepped floors in small lecture rooms.

It is clear from the above that the schools chosen for study are, primarily because of their age, outmoded environmentally and prohibit the carrying out of today's and tomorrow's educational process as they presently exist. There is substantial value in the sites and the buildings exhibit considerable potential for UPDATING.

STAIRWAY



A MASTER PLAN FOR EDUCATION

It has been clearly established that the 31 schools under study were well designed and ably constructed to meet the educational needs of the district 35 to 45 years ago.

The schools have since undergone reasonable maintenance and periodic token "modernization" to improve their teaching-learning environment.

It logically follows that in order to intelligently explore the feasibility of UPDATING these schools, a new set of definitive educational needs must be set forth by ALL parties benefiting from future use of the facilities.

This MASTER PLAN FOR EDUCATION should encompass the entire district and re-evaluate the educational needs of the community in the light of new trends in education, the relevant needs of today's youth as they vary within the district's boundaries, the change in housing patterns that have occurred since the schools were originally constructed, and the potential use of the school's use by the community.

Technological developments in construction, exciting audio-visual aids and new teaching techniques are all available as tools to accomplish the proposed UPDATING and can be employed judiciously only if the answer to "what do we want for our youth in the future" takes the form of A MASTER PLAN FOR EDUCATION.

It is of paramount importance that this plan be the result of the best thinking available, including educators, students, and parents, and be developed in the context of what is happening in the city.

Re-evaluation of the Elementary-Junior High-High School concept is certainly in order, as is the grouping of schools into complexes that compliment each other.

The Educational Park concept deserves exploration and certainly the Park and Recreation Department, the city's library system, the Art Commission and city Planning Department should contribute to the development of a master plan for education that compliments rather than duplicates existent services to the community.

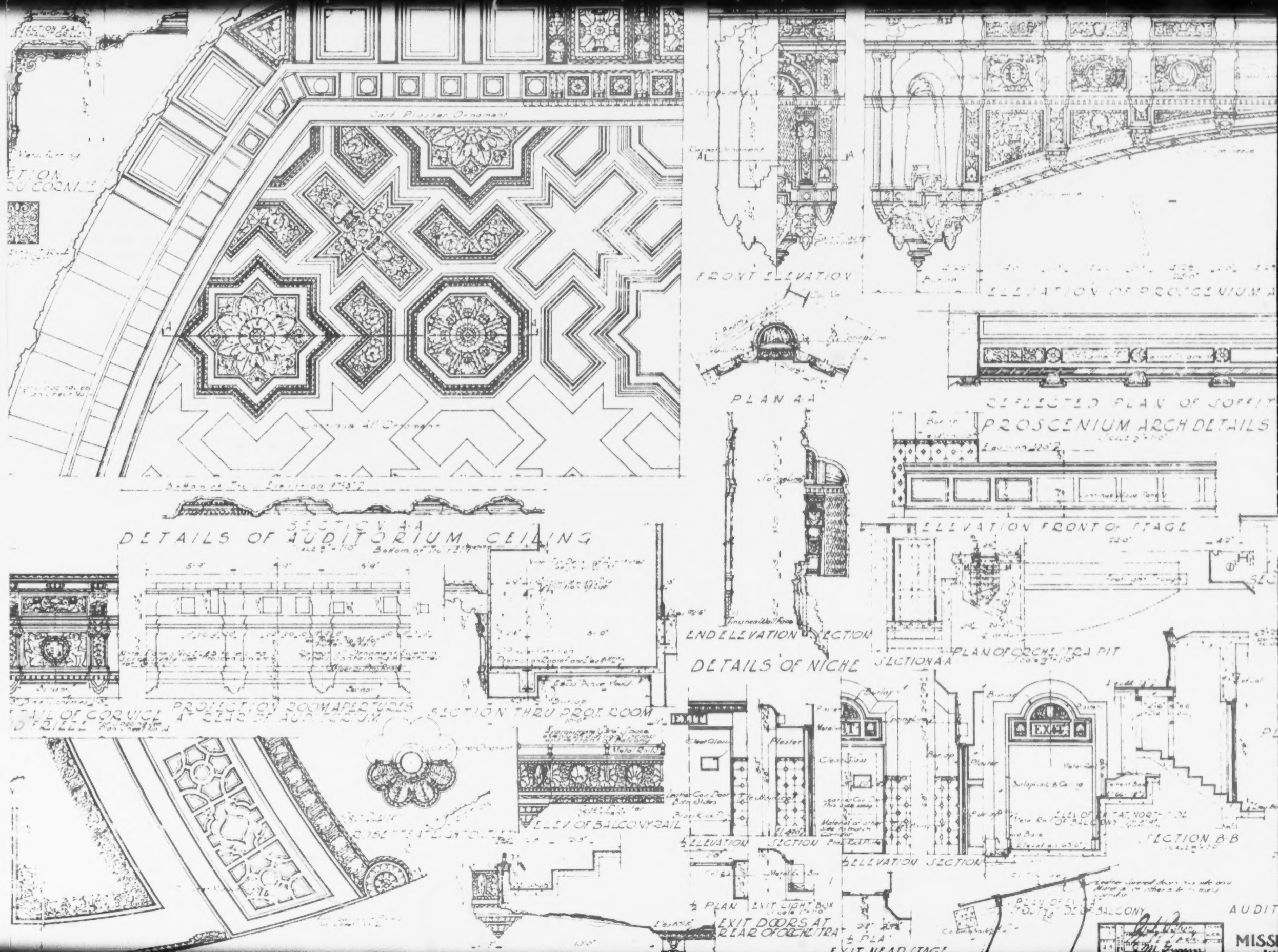
The Board of Education, its administrators and teaching staff are to be commended for their interest and enthusiasm, and their participation in researching for this report when it is realized that the demands of operating San Francisco's 132 public schools fully occupy their time and energies . . . a condition typical of urban school districts nationally.

The consulting architects for this study have met on many occasions over an eight-month period with the district's administrators, department heads and key staff members to learn of the problems inflicted by outmoded facilities and of the educational goals for the future.

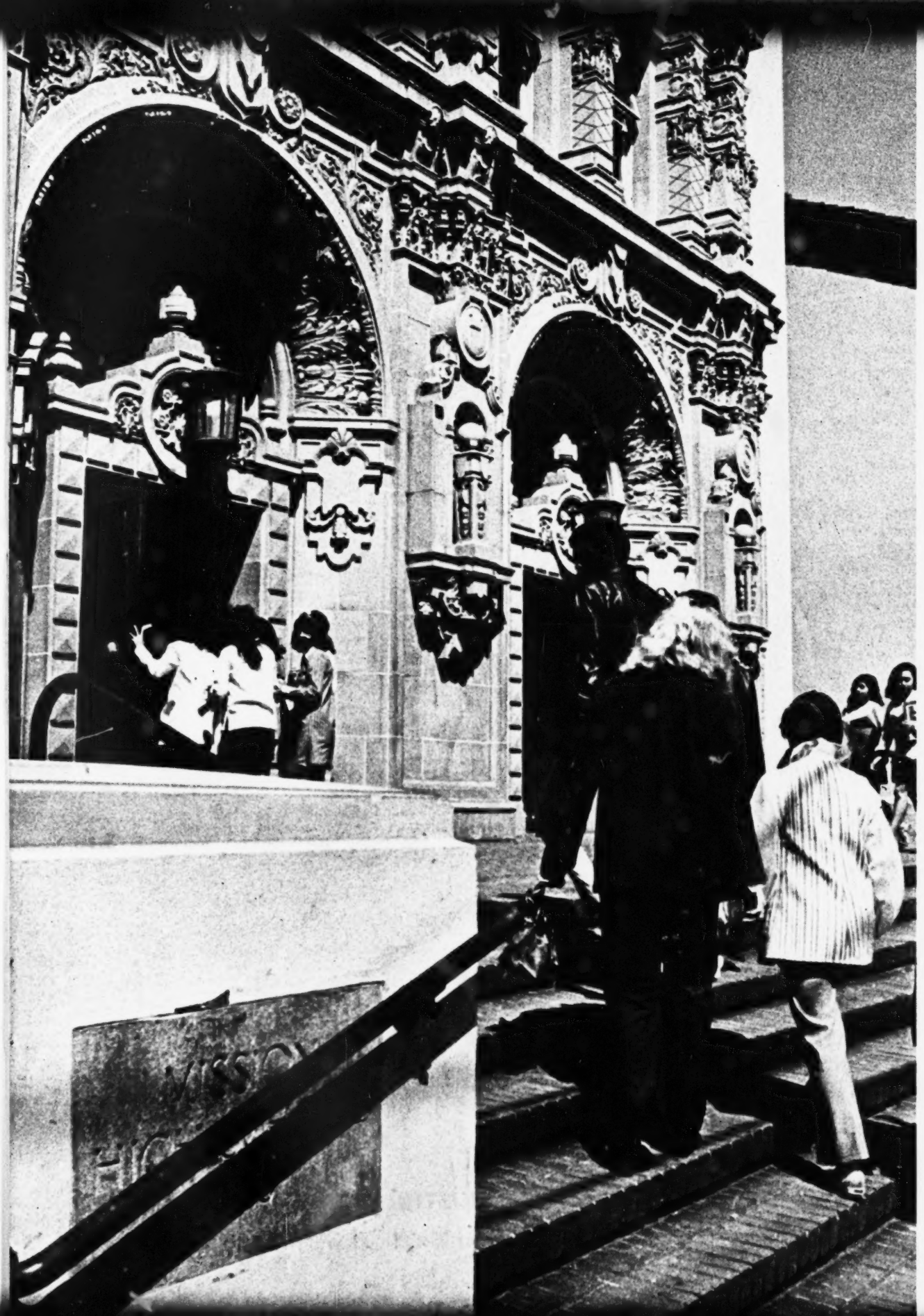
General agreement and full understanding exists that the concepts depicted in the in-depth studies reflect the consensus thinking of all participants and contributors and depict A manner rather than THE manner in which educational and physical UPDATING of the schools can be achieved.

The difference between "Plans" and "Concepts" has been acknowledged by all parties to the study and there is enthusiasm for the development of a master plan and its educational requirements from which THE most appropriate plan for each school can be developed.

If this report instigates the development of a MASTER PLAN FOR EDUCATION in San Francisco, it will have more than achieved its goal.



Cast Plaster Ornament
FRONT ELEVATION
ELEVATION OF PROSCENIUM A
PLAN A-A
REFLECTED PLAN OF SOFFIT
PROSCENIUM ARCH DETAILS
SECTION A-A
DETAILS OF AUDITORIUM CEILING
ELEVATION FRONT OF STAGE
END ELEVATION SECTION
DETAILS OF NICHE
SECTION A-A
PLAN OF ORCHESTRA PIT
PROJECTION ROOM APERTURES AT REAR OF AUDITORIUM
SECTION THRU PROJ. ROOM
ELEV. OF BALCONY RAIL
½ ELEVATION SECTION
½ ELEVATION SECTION
SECTION B-B
½ PLAN
EXIT LIGHT BOX
EXIT DOORS AT REAR OF ORCHESTRA
½ PLAN
EXIT NEAR STAGE
AUDIT
MISS



THE PRESENT MISSION HIGH SCHOOL

The present Mission High School was constructed in two increments; the first built in 1924 and the second in 1927. Both are of California Mission style architecture with ornamental Spanish tile roofs, decorative glazed wall tile and cast terra cotta ornamentation. Each increment is built around a courtyard containing a tower, each has a gymnasium flanking the main entrance and employs double loaded corridors in academic areas. The first increment contains three floors and the second four floors plus a half basement. A huge 1750 seat Auditorium joins the two buildings occupying most of the building area between the two courtyards. The Auditorium, despite its central location is used only for weekly hygiene classes and about eight times a year for student sponsored assemblies. Its intolerable acoustics preclude its potential use for dramatics or concerts. Its location further compounds a tortuous circulation pattern. In addition, each floor in each building has at least two levels, so there are as many as four different levels at each floor. Typically, each double-loaded corridor serves standard 23 by 30 foot classrooms, which at 20 square feet per student houses 35 students. Most rooms were designed for single purpose use—lecture rooms have tiered floors, and art rooms extra storage. Several classrooms are joined by movable walls but it is difficult to find one who can remember when they were last used. The choral room is outfitted with approximately 200 auditorium type chairs but is seldom used for lectures, and never for large group instruction because it is located on the fourth floor, is too wide and shallow for effective audio-visual use, and the lighting and ventilation are typically inadequate.

The school is typical of most others built between 1922 and 1932—the cafeteria is too small, wide corridors are lined with noisy lockers and shower-locker rooms are outmoded. The original plans indicate department libraries scattered about the building but they have all been abandoned in favor of one central but woefully small library, devoid of storage or any of the areas necessary to a resource center.

Virtually all teaching areas depend on operable windows for ventilation which open directly onto busy streets on three sides or into the courts which are reduced to being light wells because of the noise factor.

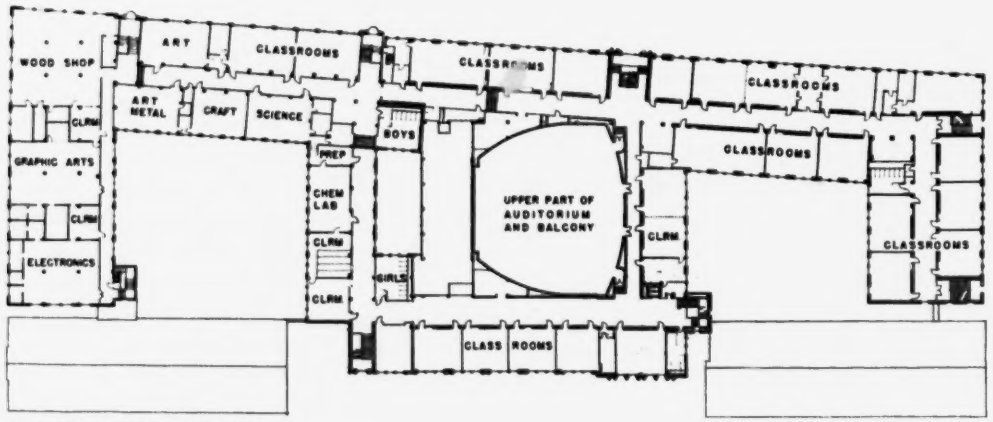
It is interesting to note that the school was designed to house 3450 students, 35 to a classroom.

Administrative, counseling and storage spaces are inadequate, and an adult education program evenings with an enrollment comparable to daytime student occupancy further taxes operation and daily maintenance.

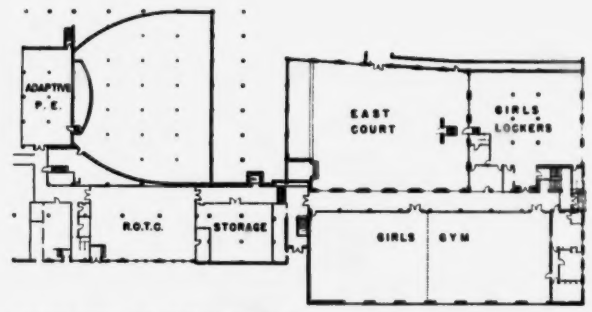
Although present enrollment is 2300 to 2400, the facilities are extremely overcrowded and, primarily because of age, present an uninviting, cluttered environment unconducive to today's educational process.

Can these accumulative shortcomings be overcome?

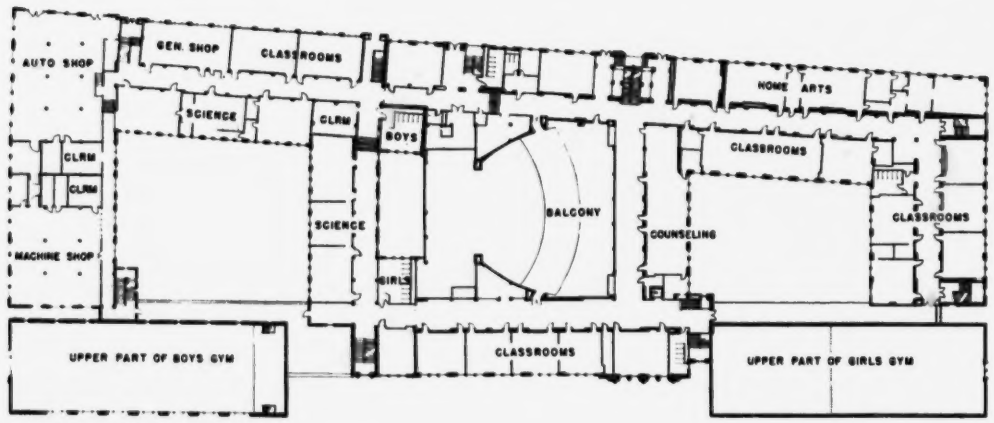
The authors, participants, and contributors to this report sincerely believe that they can.



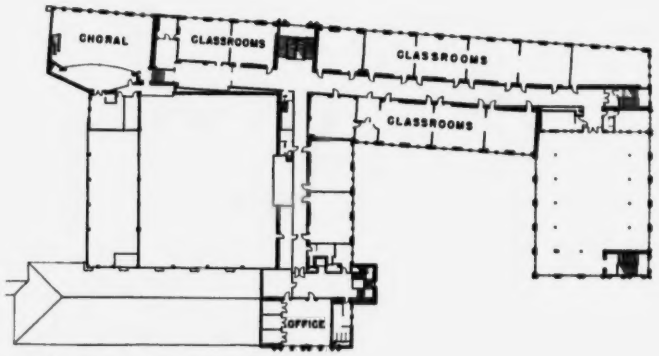
THIRD FLOOR PLAN



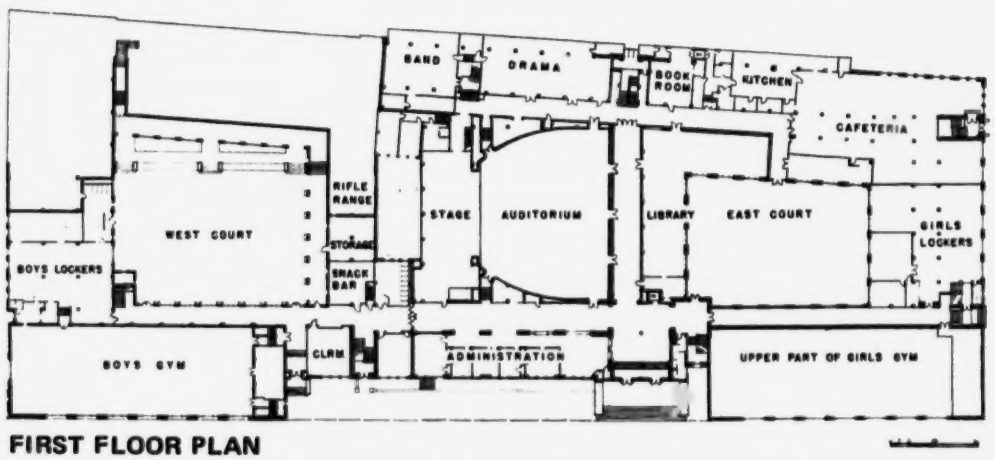
GROUND FLOOR PLAN



SECOND FLOOR PLAN



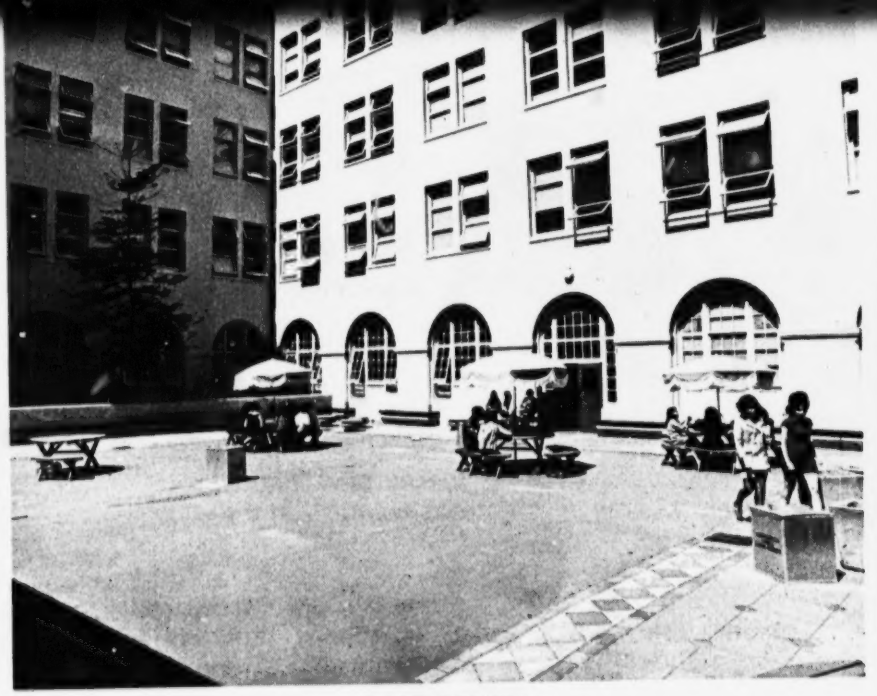
FOURTH FLOOR PLAN



FIRST FLOOR PLAN

EXISTING FLOOR PLANS
MISSION HIGH SCHOOL

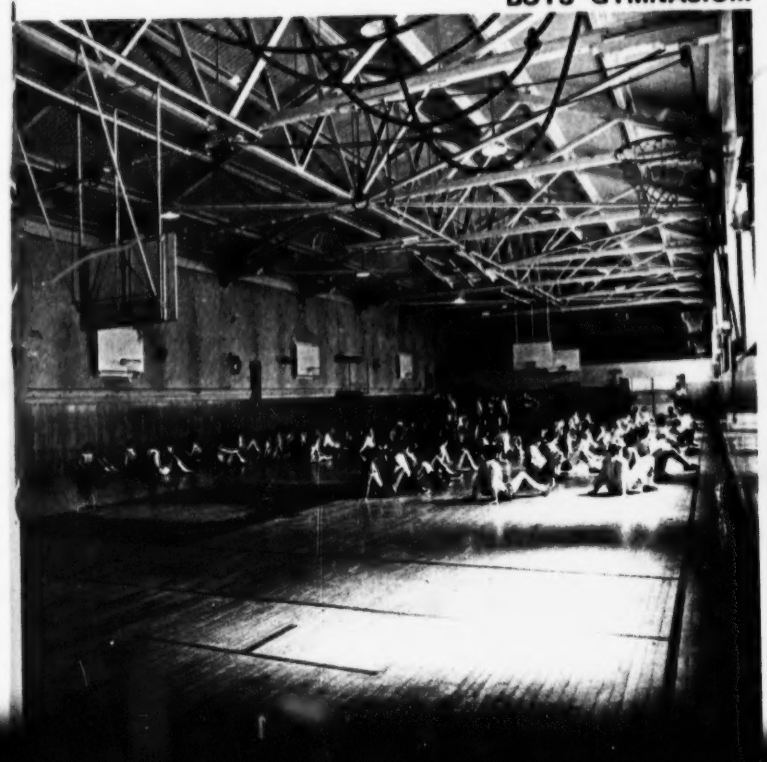
WEST COURT



EAST COURT

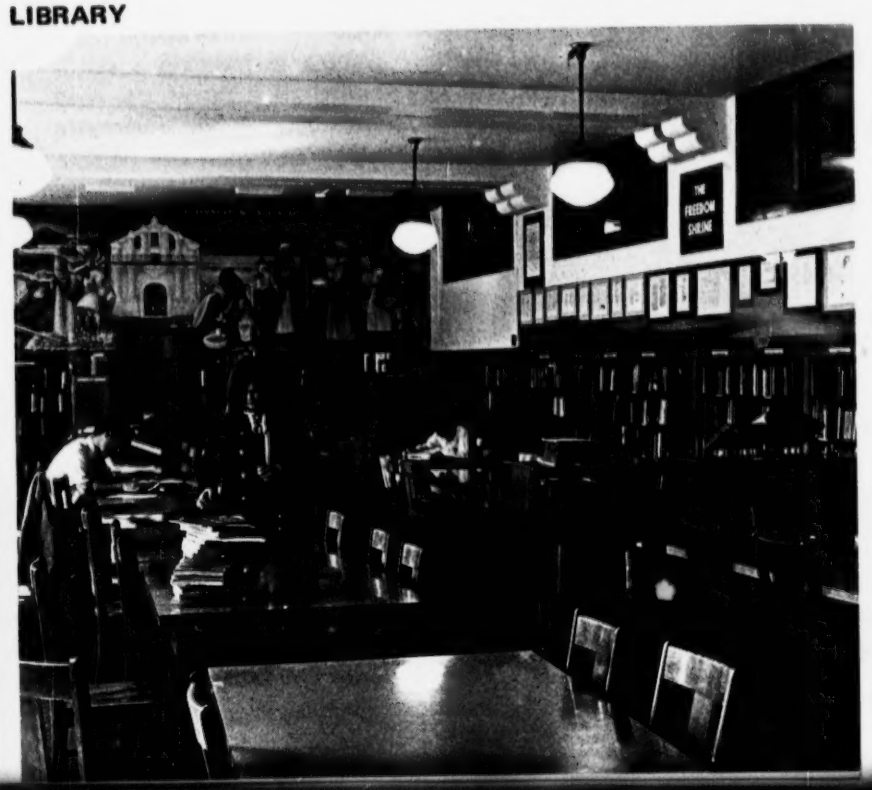
AUDITORIUM

BOYS' GYMNASIUM



CAFETERIA

LIBRARY



A NEW PROGRAM FOR MISSION HIGH SCHOOL

This report is the result of many hours spent at Mission High School and the other high schools in this study, examining existing environment, talking with students and their teachers, and exploring with policy-making administrators and department heads at the district office, determining what all of the high schools should become if UPDATING them is financially practicable.

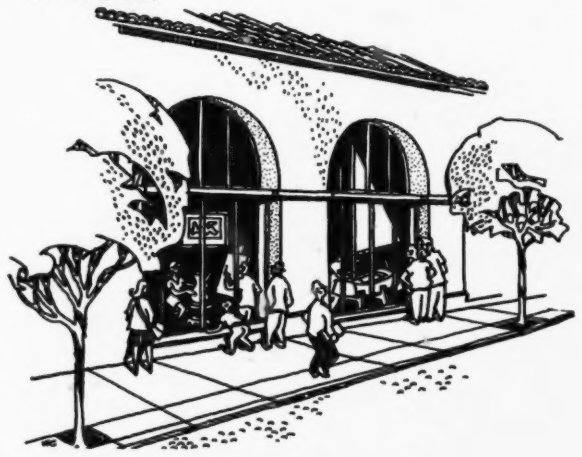
The following five major criteria emerged and appear to be equal in priority:

1. The many problems created merely by large enrollments must be overcome to allow the student to "identify", rather than feeling lost in a large institution.

2. There must be inviting places for the students to go, areas they feel are theirs to enjoy and in which they can communicate with each other . . . can't we give the school back to the students?

3. Existent restrictive rigidity and sameness of spaces must be replaced with maximum flexibility, adaptability, and variety of areas in order to "get the buildings out of the way" of the ever-changing educational process.

4. A school facility must be a community center, offering its facilities to all who reside in the neighborhood, for cultural, educational and recreational purposes. The forbidding institutional "cell-block" quality of schools demand replacement by a facility that is the magnetic hub of all communication between the people of its area.



5. The physical environment (visual, acoustical, thermal, and aesthetic) must be improved by incorporating recent technological developments in architectural and engineering design to provide a facility that is conducive to the teaching-learning process.

Full UPDATING will not be accomplished unless all five criteria are met.

The concept (not a definitive plan) described and illustrated here, draws upon the "cluster" or "house" approach to overcome problems of large enrollment, and reconfigures existing spaces plus adding some new areas to provide functions set forth in the above criteria.

A student body of 2500 students is proposed (plus approximately 200 enrolled in special programs), divided into two groups of 1250 students. During one half of the day, 1250 students will be assigned to "academic houses" and the other 1250 will be assigned to laboratory activities, such as science, shops, art, physical education, music, mathematics and business courses. In the other half of the day, the two groups will exchange places. Possibly, this initial division could be made by a student's requirement for a greater portion of his time being spent in a laboratory and another's requirement to spend more time with his books. Or, it could be an equal division with all students spending the same time in both activities.

Each group of 1250 students will be divided into five houses of 250. The exact basis of this division is not defined—it could be based on age, grade, native language, or whatever might at the time be appropriate. The primary advantage is that the student can quickly become identified with 250 other students, possibly of similar achievement levels, where he can become a true participant rather than floundering in a student body of 2500.

A student will spend one half of his time in his "house" where he will receive all instruction in English, Humanities, Languages and other academic courses—leaving only to go to the language laboratory, the Resource Materials Center, or to the Cafeteria-Lounge to study, communicate or relax. Each house will be self-contained and provide a large-group instruction space (part of the existing auditorium), classrooms for 25, 35 and 50 students, two seminar rooms which can be combined to form a classroom for 20, two small counseling offices, a team-teachers work center, rest room facilities for students as well as teachers, and a storage area. Basic to the house, will be a large area equipped for independent study with both carrels and less formal arrangements and providing a place for every two students assigned to the house during that time. The independent study area will have immediate access to both Resource Materials Center and to outdoor study terraces. Approximately 475 seats will be provided in each house, in addition to the shared seats in the Resource Materials Center, the Language Laboratory, and the Cafeteria-Lounge, offering the student ample flexibility in the course of independent study. This will free him from the present system where his place of study is dependent on 30 to 35 others, and he cannot alter it until another seat is vacated.

It is anticipated that a student will develop a real interest in school, will establish his own method of learning and set his own pace, monitored by the teaching staff. Hence the sight of movement at all times will be expected and a group congregated in the cafeteria will not be cause for alarm. Allowing more freedom of movement can diminish the needs of wide corridors and huge rest rooms. By including rest room facilities in each house, it is hoped that individual pride in the facilities will be maintained.

By providing a large cafeteria-lounge where a student can study or relax, as well as eat, and outdoor study areas, individual study carrels and an open resource center, a schedule of two individual lunch periods can be abolished—instead, all students will have both time elements free to eat, study, play, or relax at leisure. The auditorium might be opened and films shown during part of the period.

In order to fully achieve the "house" concept, the assignment of interior spaces is reorganized as follows:

1. The five houses of 250 students each, resource center, language laboratories, student activity areas, cafeteria-lounge and girls' physical education occur east of the central auditorium, expanding into the east court on two levels.

2. Science, homemaking, business education, industrial arts, arts and crafts, vocal and instrumental music occur west of the auditorium, expanding into the west court on two levels and re-assigning the existing boys' gymnasium as an "art barn". Related disciplines such as industrial arts, arts and crafts, homemaking, and science

all open on to the terraced court, utilizing it as supplemental teaching-learning space and as an area where students can go at any time to "be where the action is".

3. The existing 1783 seat sloping floor auditorium with balcony is remodeled by adding a floor at balcony level which reduces its capacity to approximately 1100, facilitates its instant divisibility into five large group instruction areas (one for each house), and providing ground floor space for counseling, administrative, and storage functions. The proposed remodeling of the auditorium will also facilitate alleviation of its existent acoustical shortcomings.

4. The existent inadequate boys' gymnasium-shower-locker room facility is re-assigned as an arts and crafts area, a new gymnasium building is proposed adjacent to the athletic field with outdoor physical education space on its roof and a new shower-locker room for the boys. The new facility includes presently non-existent spectator seating for basketball, etc., and greatly enhances community use of the school.

5. The existing kitchen is relocated to facilitate service and the cafeteria is expanded into the east court as a dining-lounge-student activity area.

6. The "house" concept for 2500 students can be comfortably programmed into the complex's first three floors, leaving existent fourth floor areas for experimental programs for approximately 200 students and a staff retreat area.

The above described physical changes to Mission High School will be accompanied, automatically, by environmental UPDATING to include:

1. A new heating system incorporating forced ventilation to handle newly created inside spaces and to eliminate the existent problem of street and court noise entering through open windows.

2. New integrated lighting-acoustical treatment of ceiling areas throughout.

3. New plumbing fixtures and their required services.

4. Movable and relocatable walls to allow maximum flexibility of the UPDATED facility.

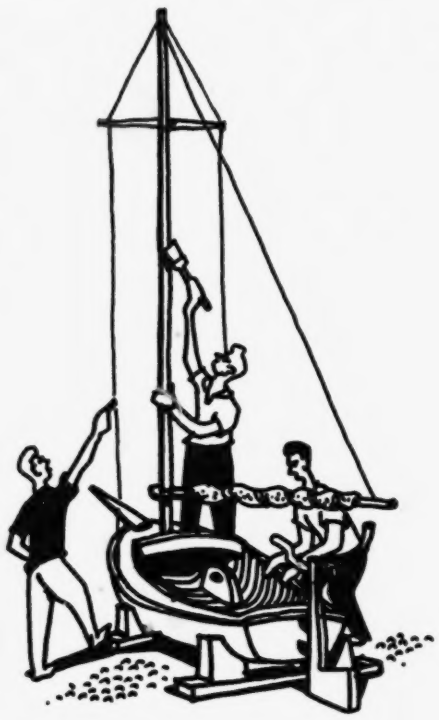
5. Carpeting in all appropriate areas.

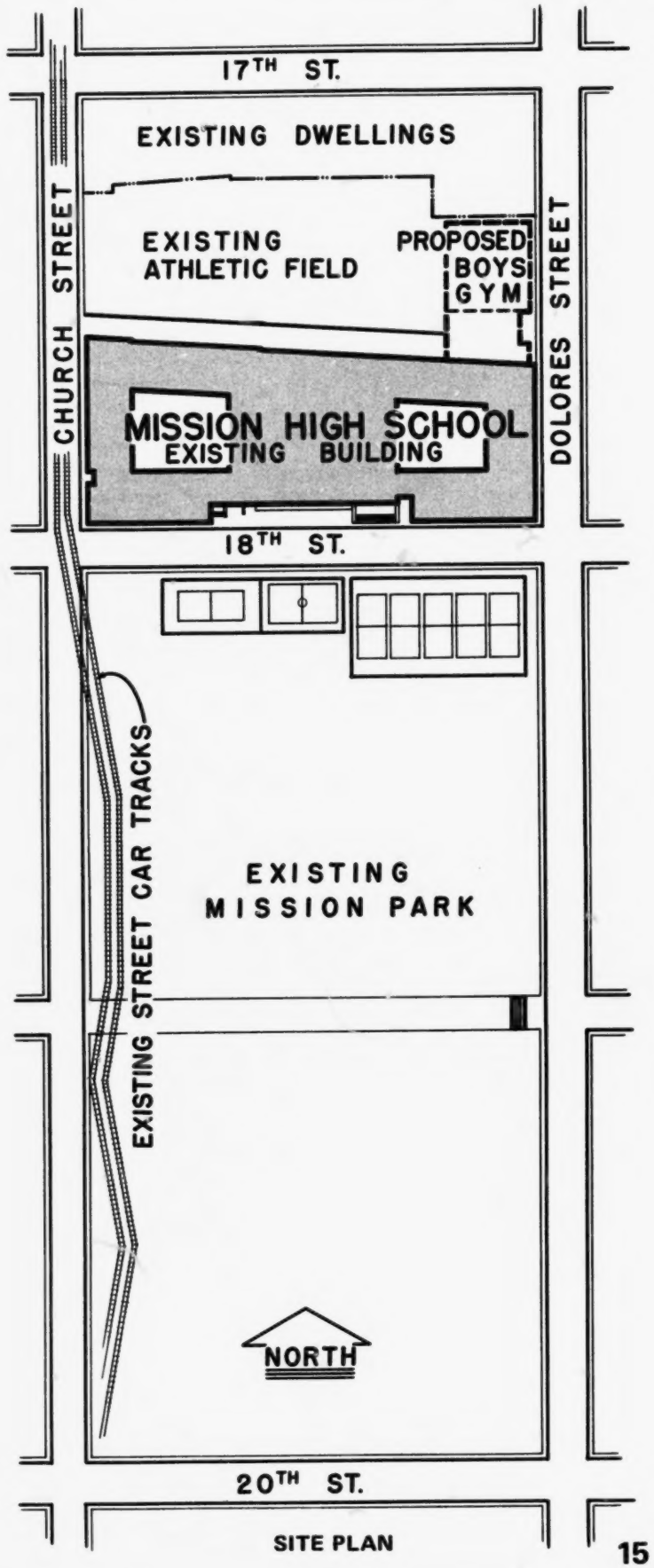
6. Electrical services necessary to the utilization of closed circuit television, audio-visual aids, and required inter-communication.

7. Work on the structure of the buildings that will render them in conformance with current state laws applying to public school buildings.

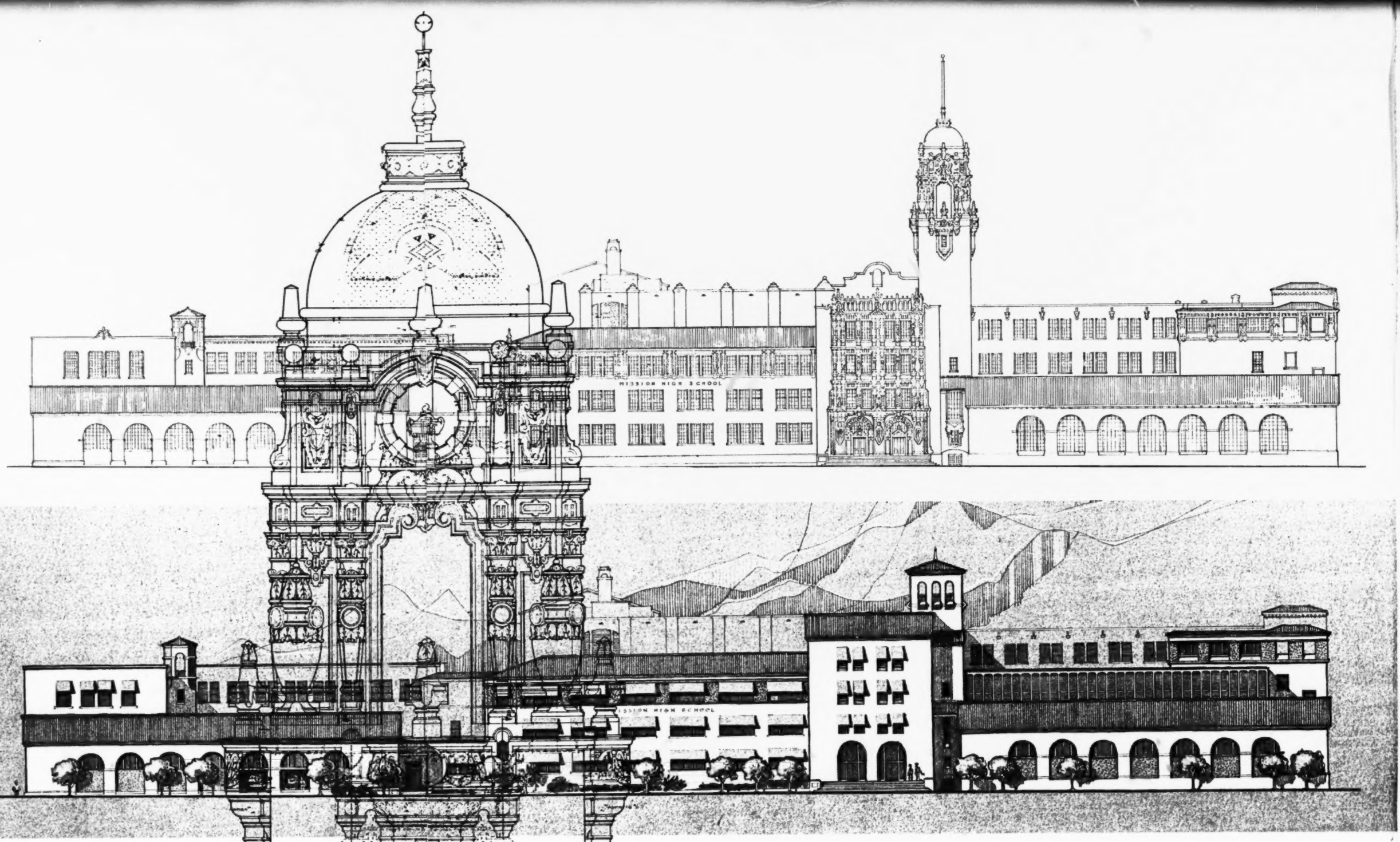
Mission High School is bounded on the south, west and east by major streets which cannot be closed. The 5.2 acre site could be expanded to the north to provide additional physical education space and possibly a staff parking structure underground. Site expansion is encouraged by the authors of this report but not included in their studies.

This new program, here presented in concept form, effects a revolutionary change in the ability of Mission High School to meet today's and tomorrow's educational and community needs. Its economic feasibility and implementation is covered in subsequent sections of this report.

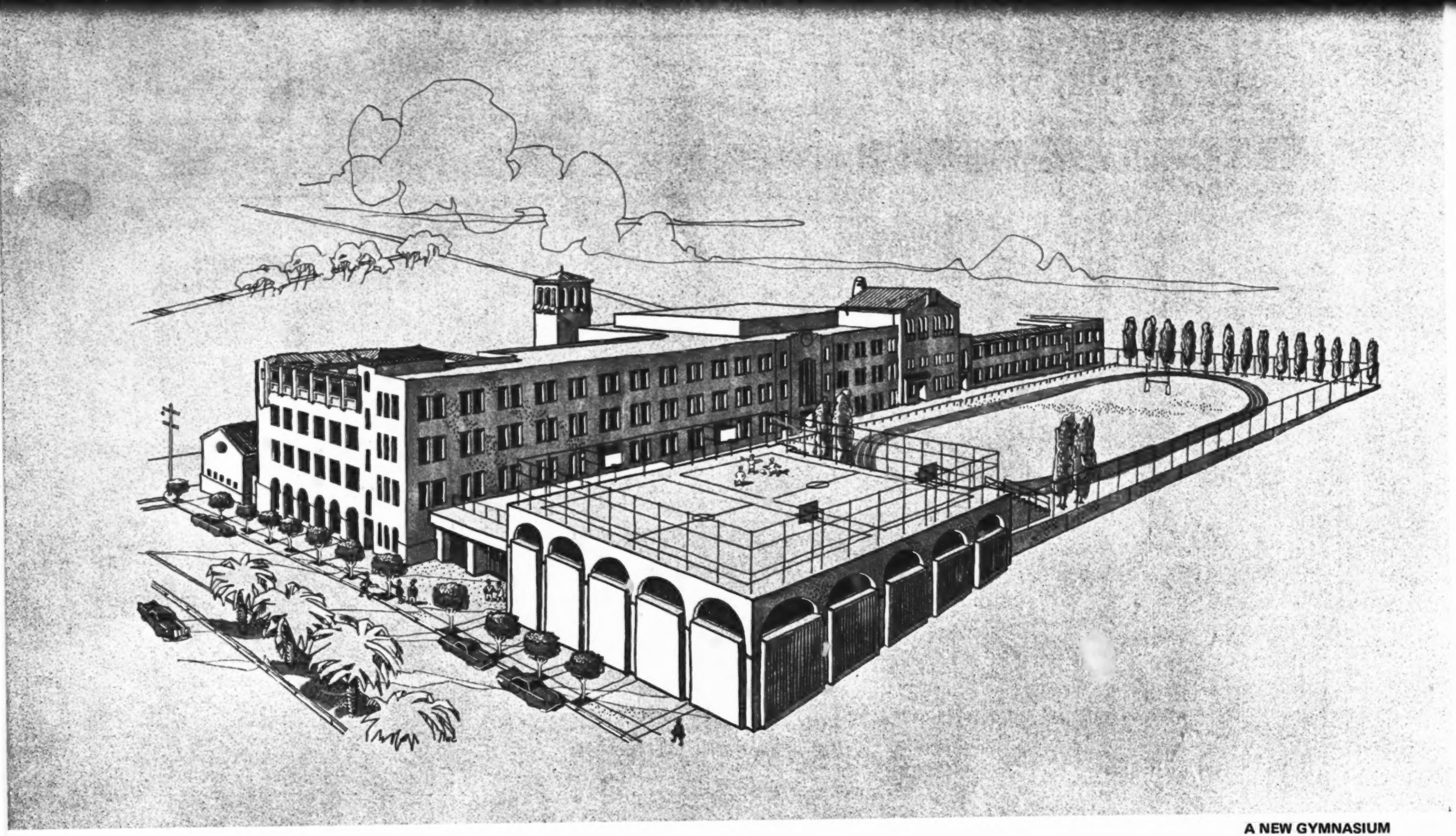




SITE PLAN



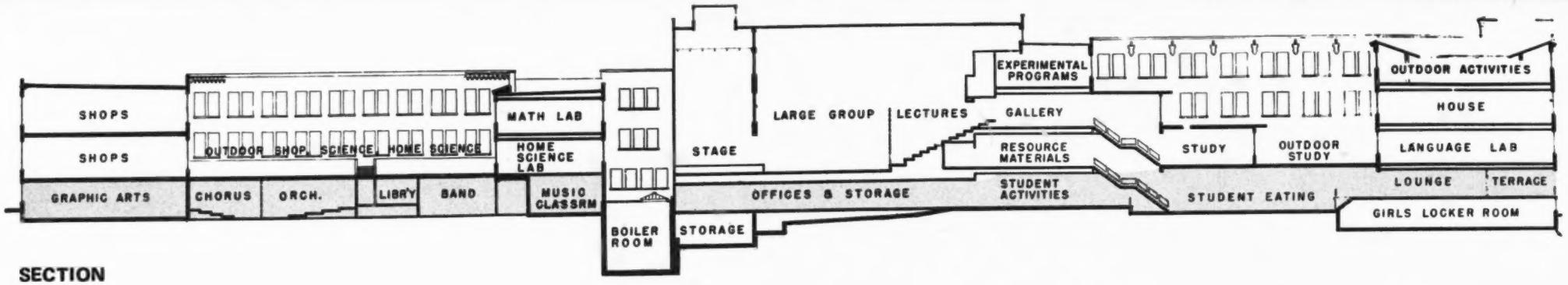
PART ELEVATION OF TOWER



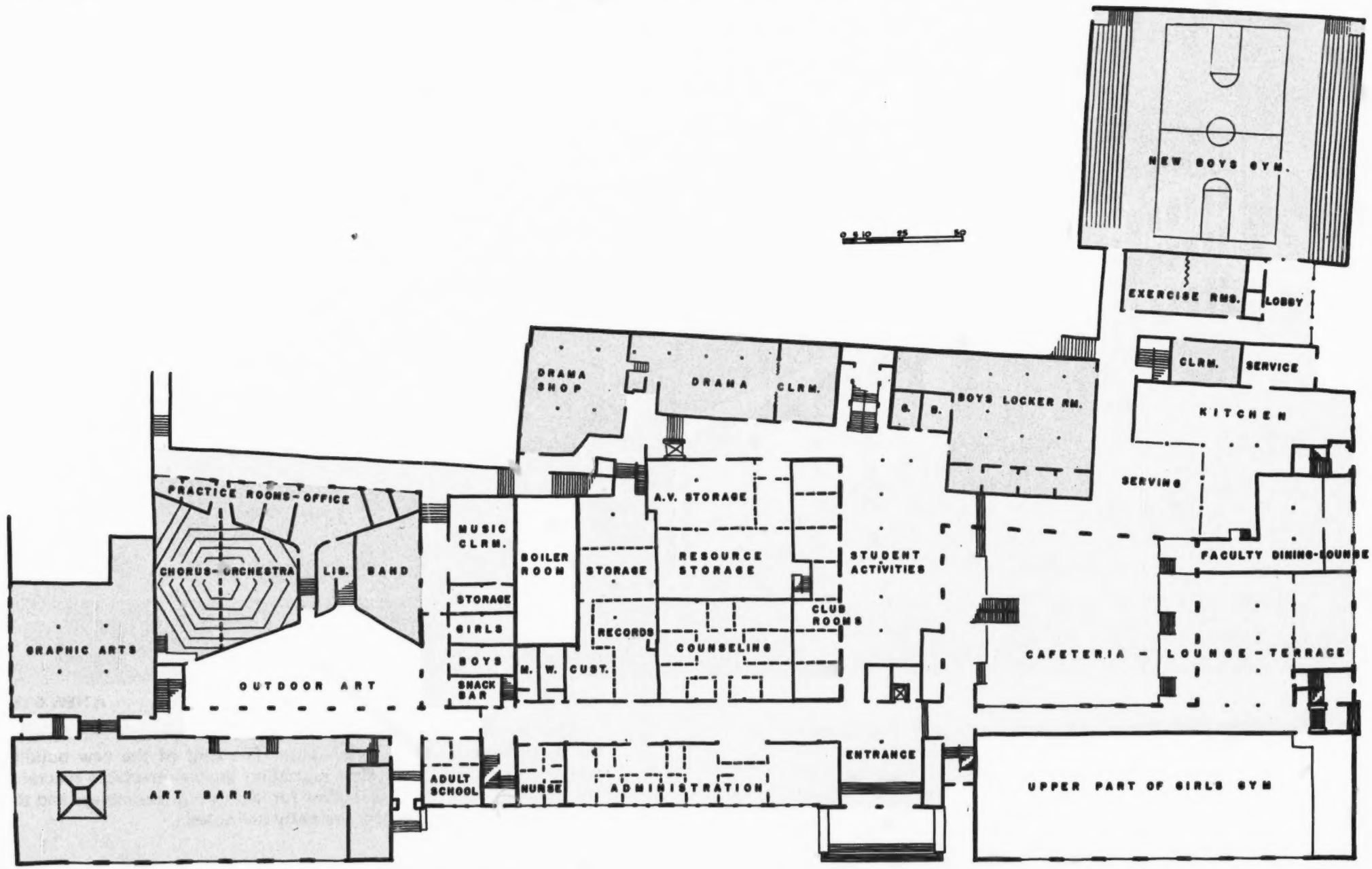
A NEW GYMNASIUM

In order to bring Mission High School into compliance with current construction laws, all of the existing unanchored cast stone or glazed terra cotta ornamentation must be removed, as well as a major part of the decorative central tower. Although there is great charm and considerable sentiment attached to the ornamentation, it is felt that with sensitive modification, the architectural character of the building can be preserved. The suggested architectural modifications, shown at left on a sketch of the school's south facade, include sun screens to combat direct sunlight and provide sculptural interest.

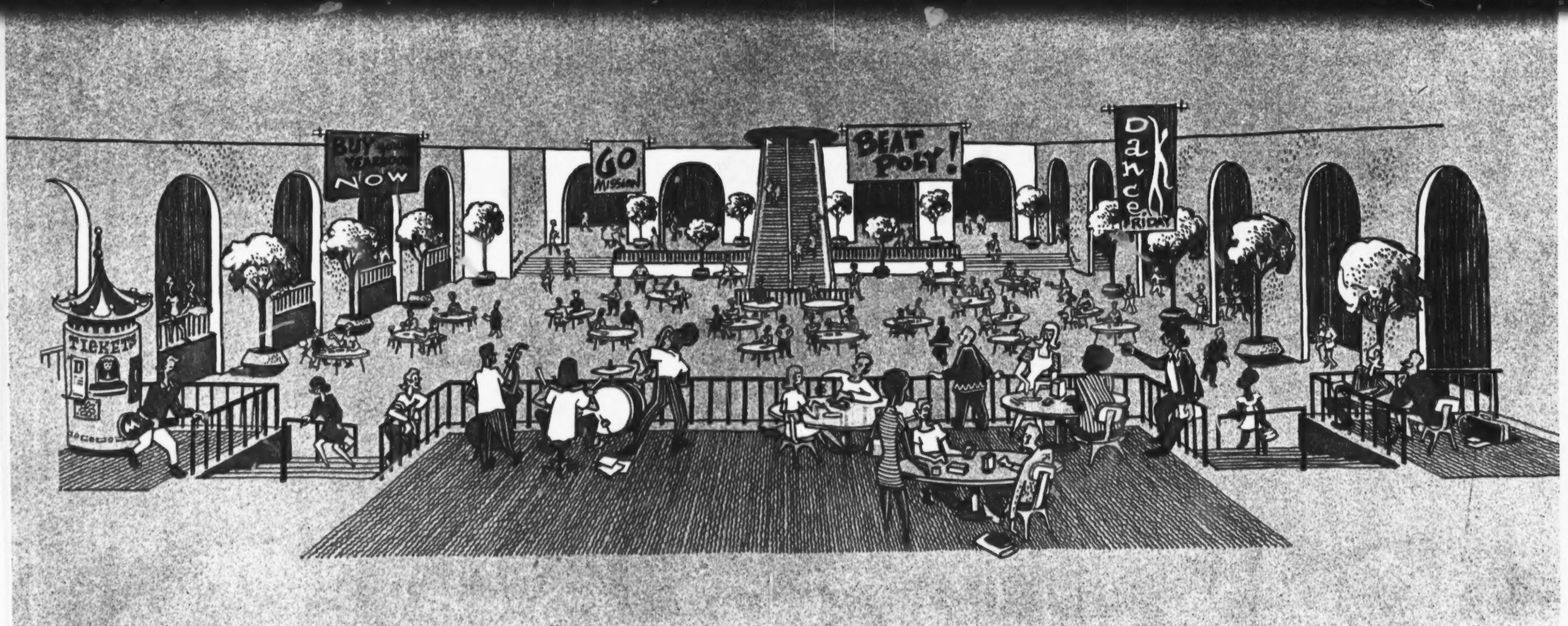
The perspective sketch above indicates the location and general mass of the suggested new boys' gymnasium. The roof of the new building would provide supplemental physical education area. Retractable spectator seating for competitive athletics will allow for large group assemblage and the myriad of community activities now presently unhoused.



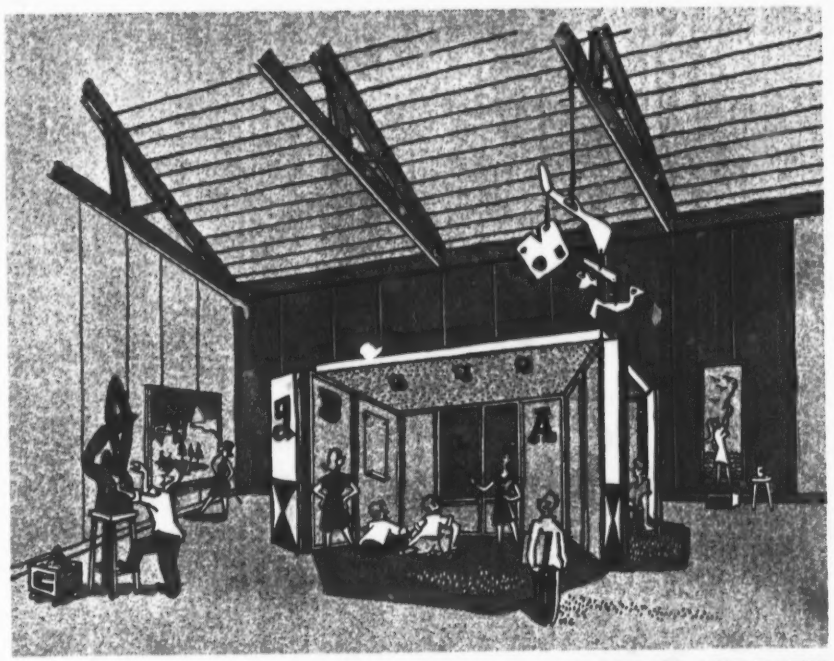
SECTION



PROPOSED FIRST FLOOR PLAN – MISSION HIGH SCHOOL



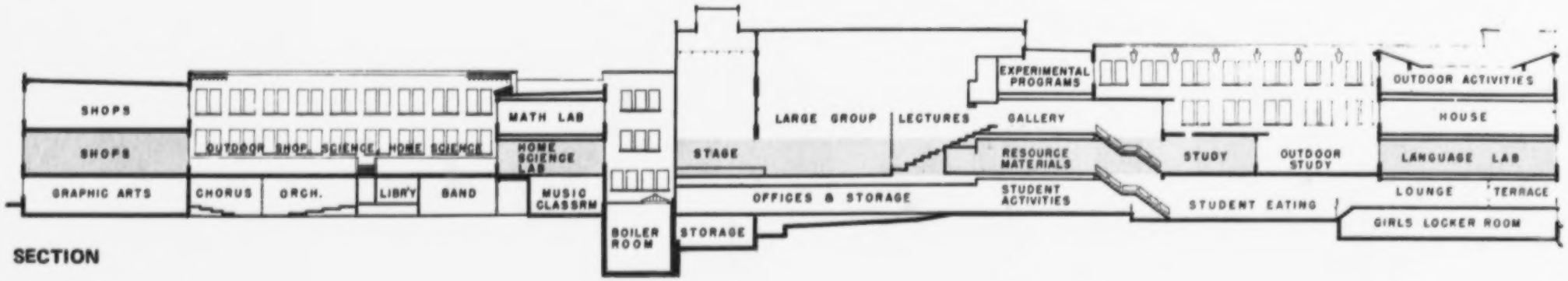
NEW CAFETERIA – LOUNGE



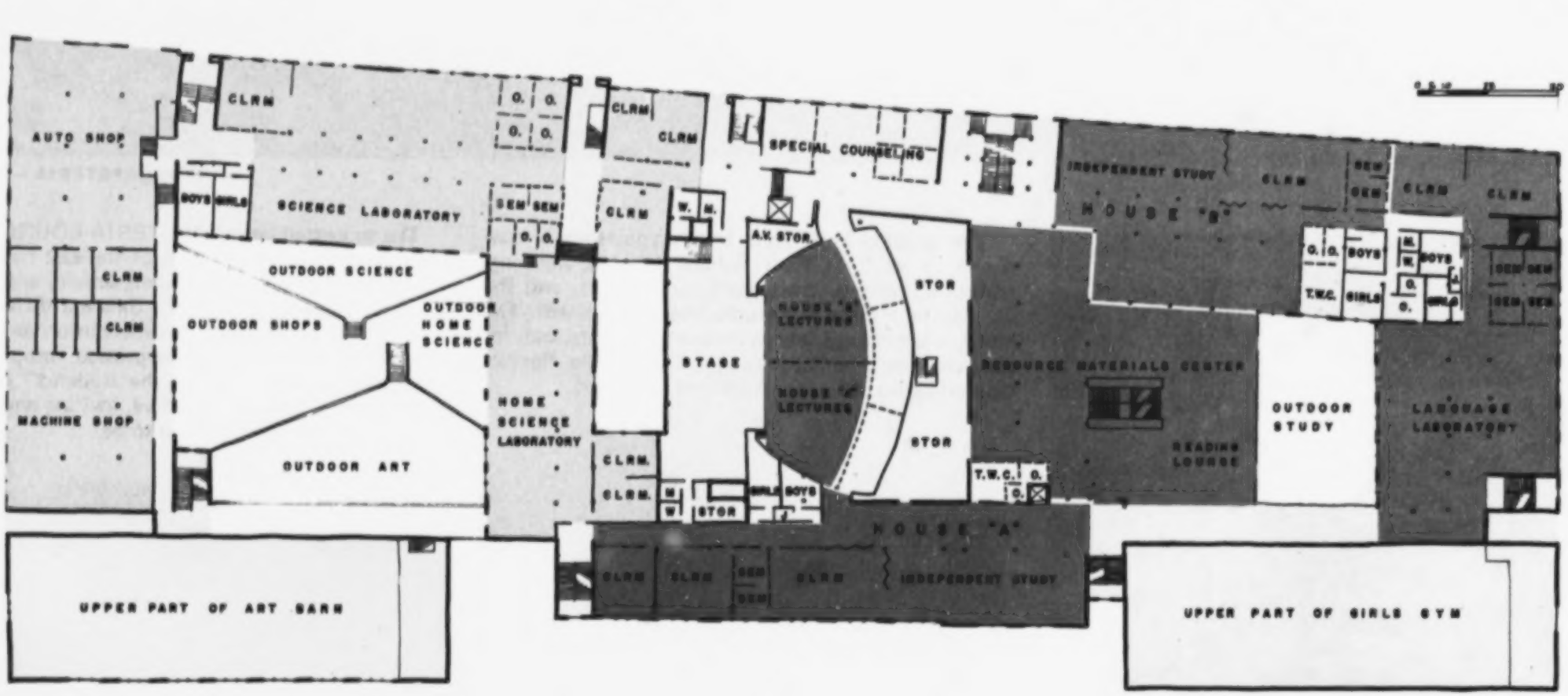
KIOSK IN ART BARN

The existing inadequate boys' gymnasium is reassigned as an "Art Barn" where drawing, painting, sculpture, carving, craft work, graphic art, and the like can take place in a studio-like environment. The kiosk at left is suggested as a carpeted lecture shell for teacher-student communication. This simple, flexible structure could be easily relocated as desired.

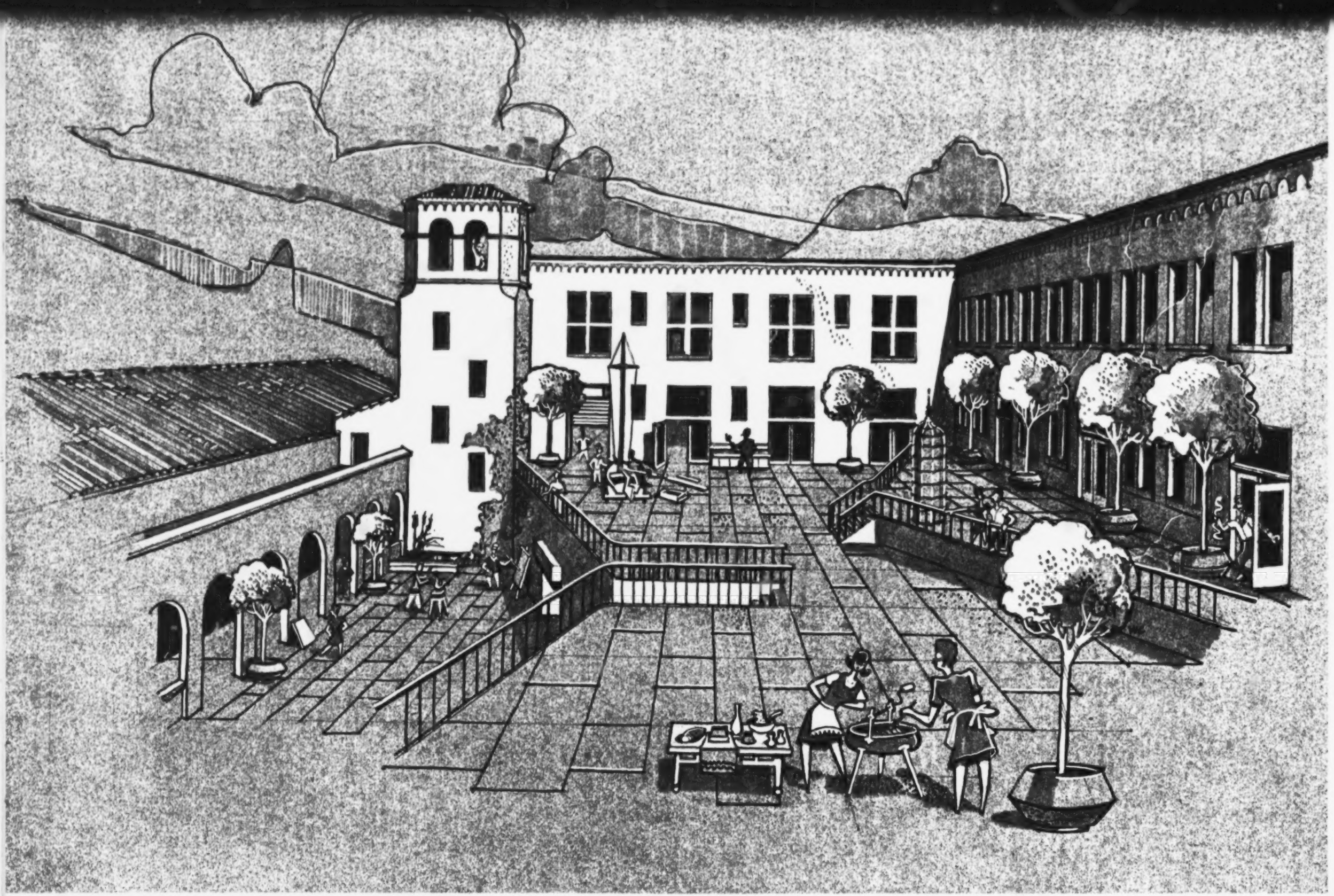
The suggested large CAFETERIA-LOUNGE, utilizing the present ground level of the east court, is envisioned as the hub of all student activity with student offices adjacent to the west. Existing differences in floor levels are exploited to create informal gathering areas and the previously expressed design goal of "giving the school back to the students" is demonstrated by creating an attractive, inviting environment that is truly the desired place to be.



SECTION

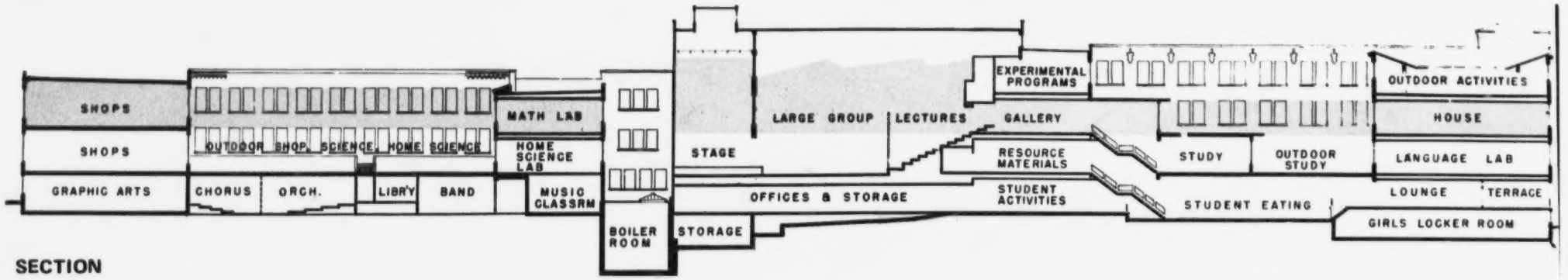


PROPOSED SECOND FLOOR PLAN – MISSION HIGH SCHOOL

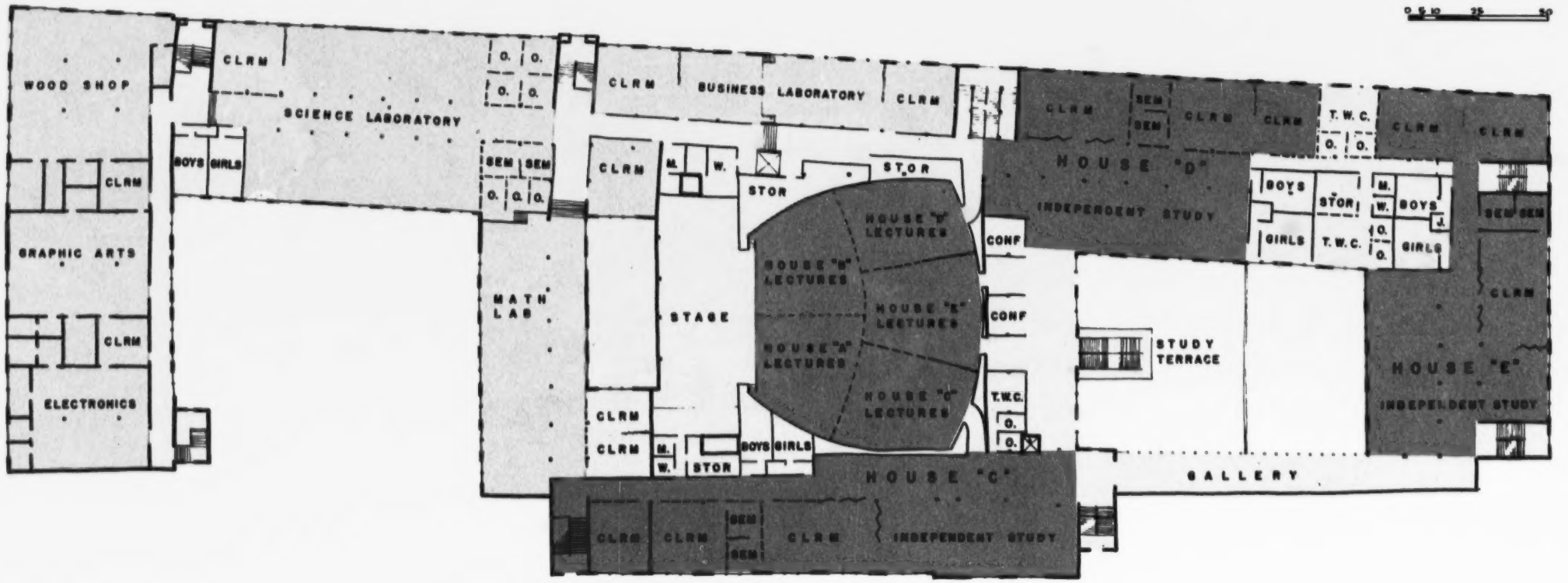


WEST COURT

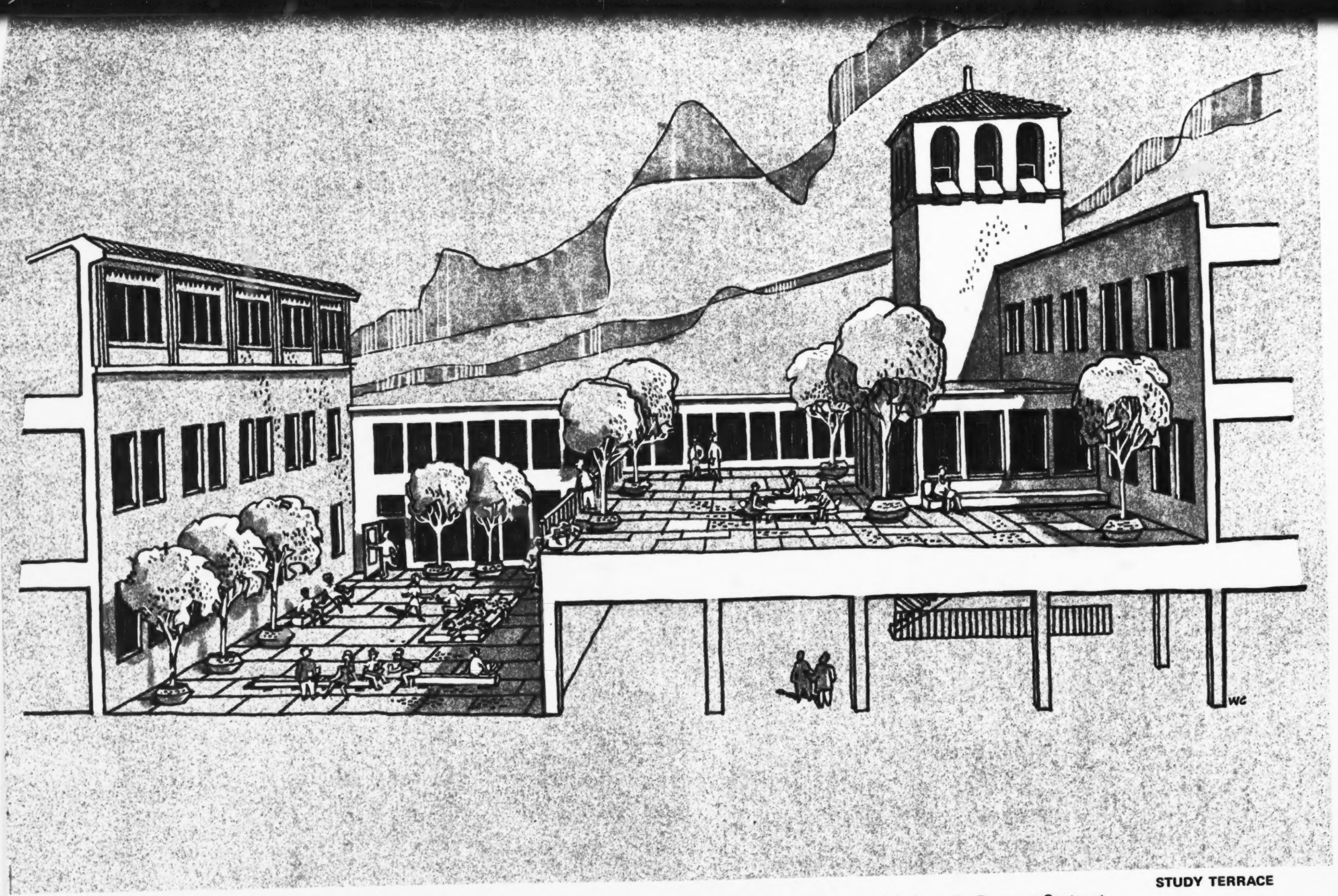
An outdoor area is suggested for arts and crafts at the first floor art barn level. A stairway connects this area to the level of the industrial arts shops to the west and the new domestic science rooms to the east. A third level, to the north, serves the science laboratories. These three areas double as places for students to go during lunch hour and to observe what is going on in their school.



SECTION

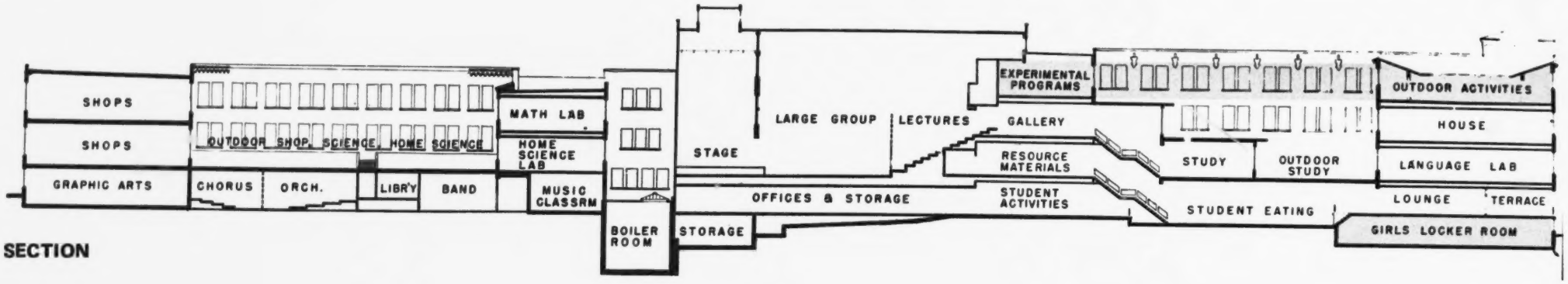


PROPOSED THIRD FLOOR PLAN – MISSION HIGH SCHOOL

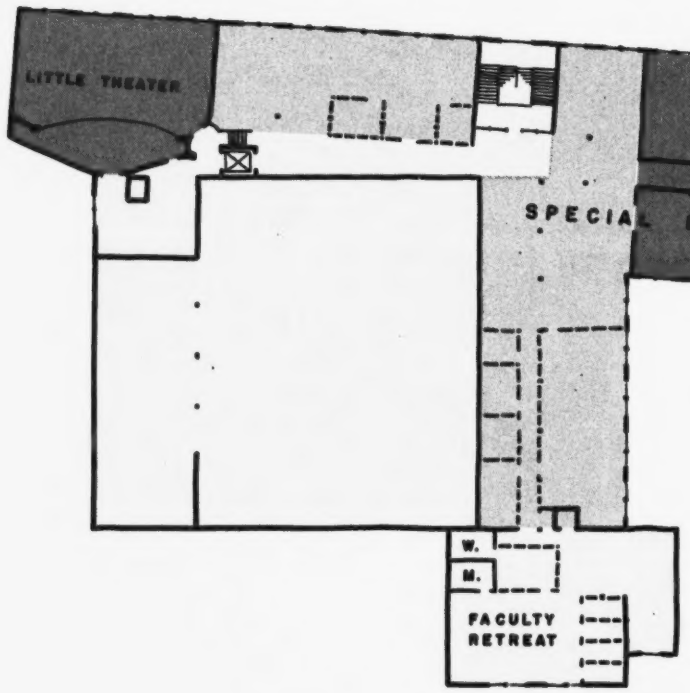


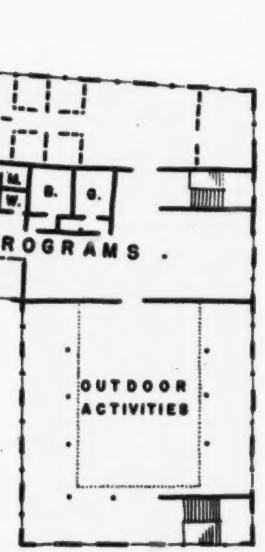
STUDY TERRACE

The roof of the new cafeteria-lounge in the existing east court creates outdoor terraces accessible from the Resource Center at one level and from typical houses at another. These sheltered and landscaped terraces also serve as quiet places for students to go during lunch hour.

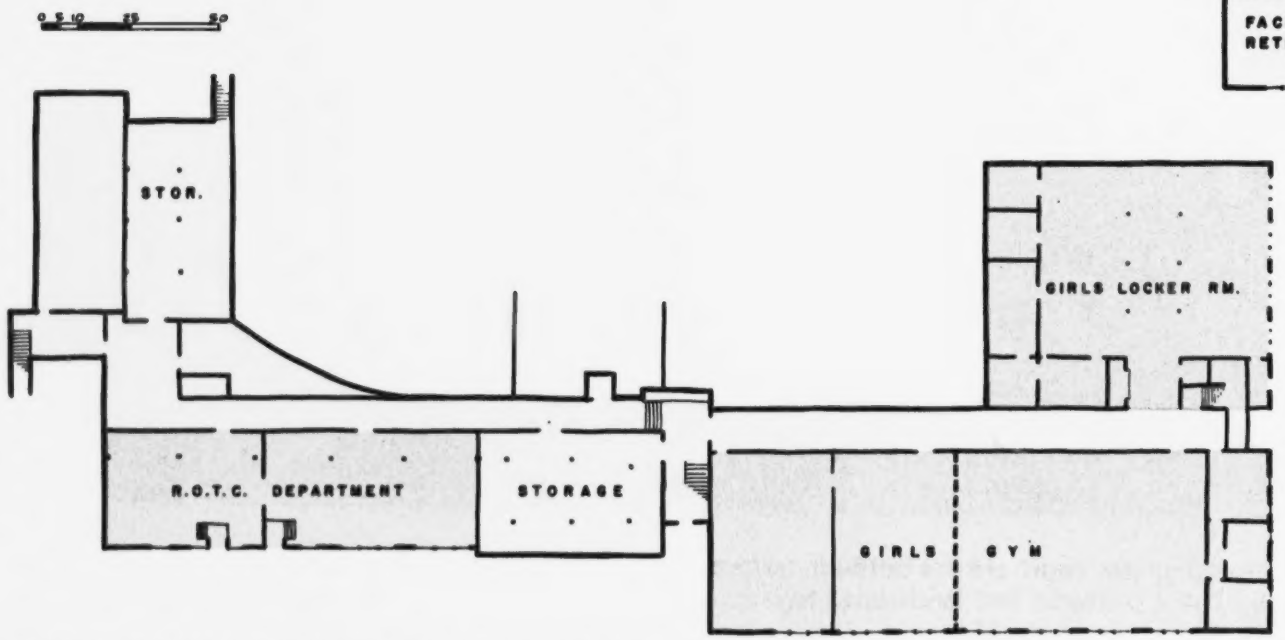


SECTION





PROPOSED FOURTH FLOOR PLAN

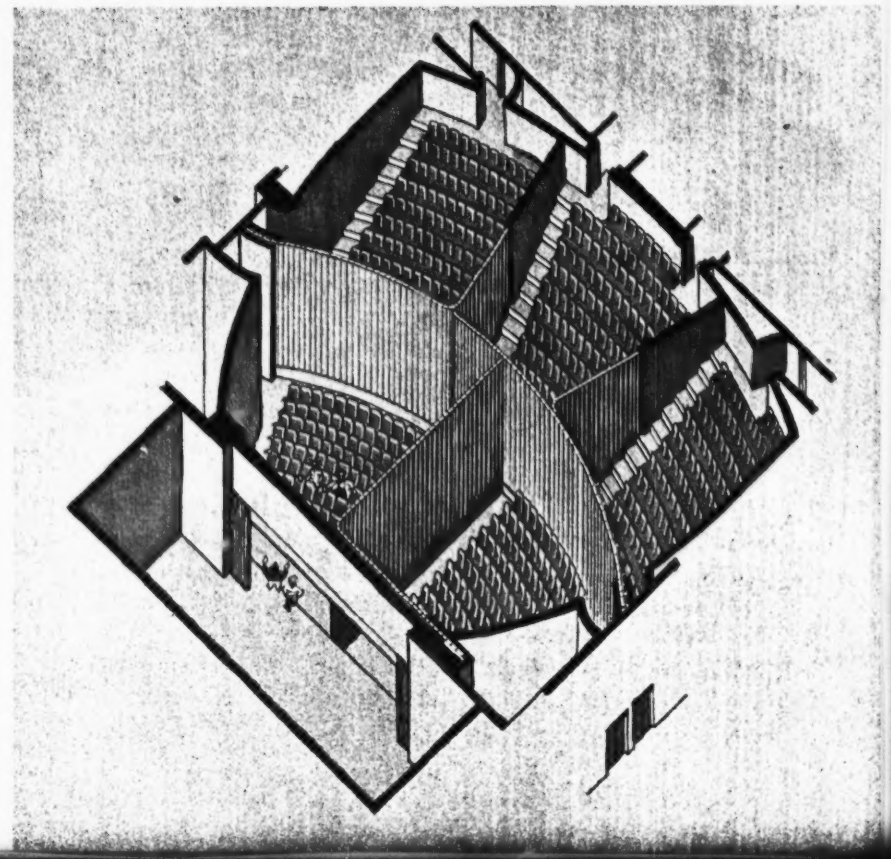


PROPOSED GROUND FLOOR PLAN – MISSION HIGH SCHOOL

ISOMETRIC SKETCH OF TYPICAL HOUSE

This isometric sketch illustrates one of five typical "houses" for 250 students, including individual study area, large group instruction, flexible classroom areas, teacher office and preparation areas, storage, and rest rooms for students and teachers.

The sketch at right indicates suggested modifications to the existing 1783 seat auditorium. A level floor would be installed at balcony level, creating needed administrative space on the first floor and allowing more diverse use of the remaining auditorium. Movable partitions would be installed to create five large group instruction areas, one for each house, but also allowing use as a 1000 seat auditorium by the school and community. A new, acoustically designed ceiling would replace the existing ornate, but unstable cast plaster ceiling.



APPLICABILITY OF MISSION HIGH SCHOOL UPDATING CONCEPT TO OTHER HIGH SCHOOLS

Of the 11 high schools in the San Francisco Unified School District, eight offer a comprehensive educational program. Four of these eight are a part of this study because they do not conform to present laws governing the construction of public schools in California. Although the other four do, they too could well benefit from the UPDATING advocated in this report.

Mission High School was chosen by the District for "study in depth" with the assumption that planning techniques and updating procedures could be generally applied at the other three, Galileo, Polytechnic, and Balboa. Thorough inspection of these three indicates the following:

GALILEO HIGH SCHOOL

Galileo's bi-sected 4.85 acre site contains buildings of the same vintage and architectural character as Mission and a plan similar to Mission with shops and laboratories wrapped around the auditorium. There is also a classroom structure and single large central court. Boys physical education functions in a gymnasium-shower-locker room building and athletic field separated by a through street from remaining facilities but connected by an underpass. Recent overcrowding has forced 10th grade classes into adjacent makeshift facilities at Fort Mason. It appears feasible to generally apply the "house concept" to Galileo High School provided it is understood that little additional area can be added, therefore forcing a reduction in enrollment.

Parenthetically, appropriate student capacities at any of San Francisco schools can only be properly determined through the development of a district-wide master plan for education.

BALBOA HIGH SCHOOL

Balboa High School was constructed on a much larger 10.5 acre site, is more spread out than either Galileo or Mission, and its plan forms a spacious quadrangle. Two sides of this quadrangle are occupied with academic type classroom buildings, auditorium and music facilities are on the third side and the fourth is partially occupied with shop buildings. The gymnasium and lockers are housed in a separate building outside of the quadrangle with the cafeteria occupying about half of the basement. Like Galileo, the academic areas could be opened up to accommodate the "house concept" quite easily, but because the plan is more spread out they would be more remote from both the resource materials center and the auditorium, which could be remodeled to house large group instruction. Because both academic buildings are a full three floors, access to outdoor study and activity areas would be difficult on the first floor and impossible on the second and third floors. One of the most desirable aspects of the Mission scheme is the creation of the Cafeteria-Lounge as a hub of student activity and the access to the houses through the centrally located resource center. At Balboa construction of a new area to serve this function seems less feasible as the existing cafeteria is adequate though poorly located in consideration of its potential function as a center of student activities.

It appears generally feasible to apply the "house concept" to Balboa High School provided further study is given to developing student activity areas and an expanded resource center.

POLYTECHNIC HIGH SCHOOL

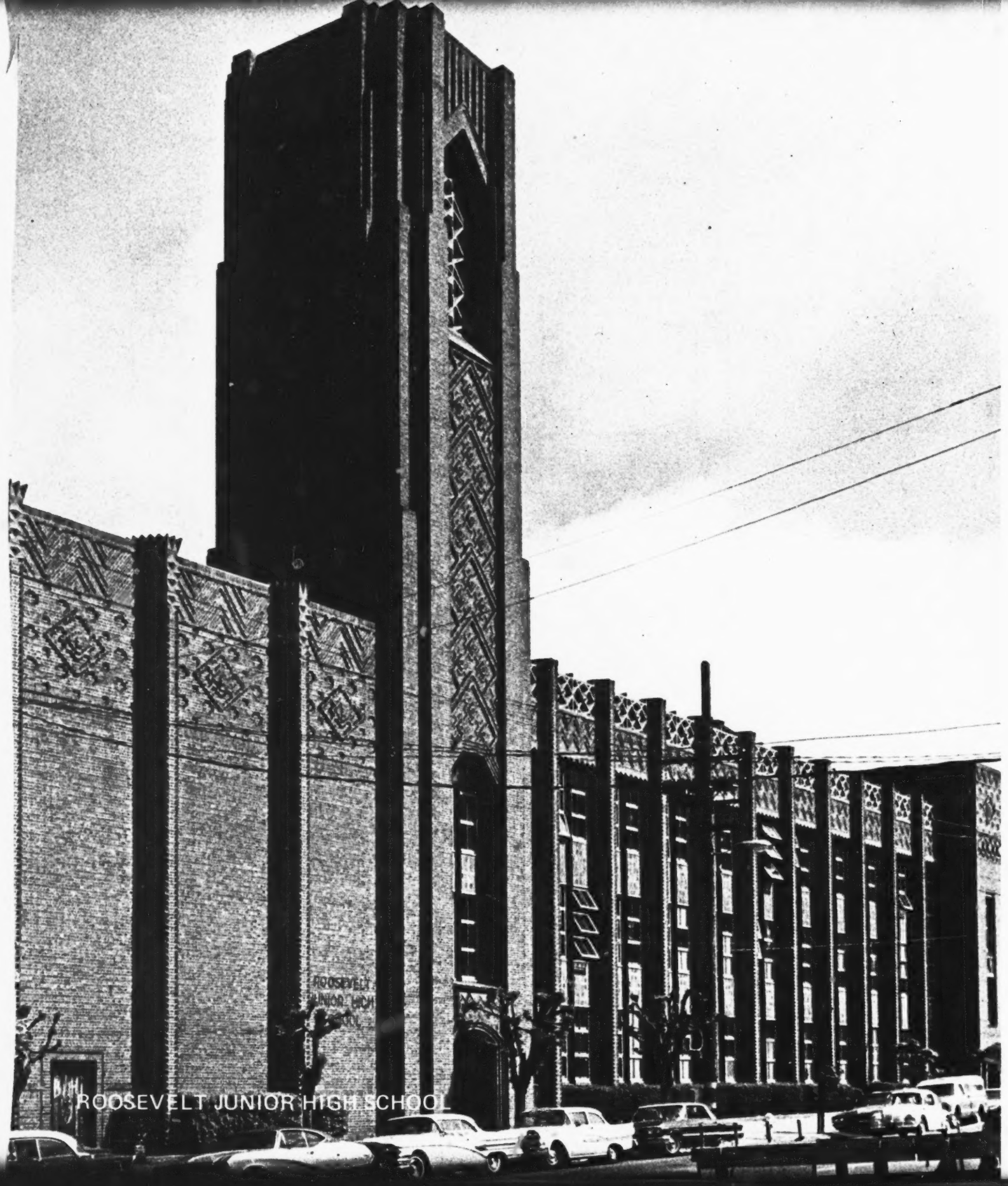
Polytechnic High School has little in common with any of the previous three. It is considerably older, some parts having been constructed in 1912 and 1915. The architecture of the main academic unit is neo-classic, flanked by the neo-gothic style gymnasiums. The girls' gymnasium was constructed in 1937 and does conform to the provisions of the Field Act. The academic building is a long rectangle in plan with a small centrally located auditorium, and contains three floors of double loaded corridor layout plus a full basement. The large U shaped shop building is essentially one story. The buildings cover nearly 60% of the small 3.3 acre site and total level outdoor court area is only 94 feet by 220 feet. Although records indicate a design capacity of 2720 students, current enrollment is about 1450, barely accommodated in the buildings. It is unfortunate that the non-conforming one-story shop building has undergone a series of costly non-structural improvements in recent years to improve the industrial arts program.

Because of the massive unreinforced exterior brick walls, the excessive cast stone ornamentation, and the lack of elements to resist lateral forces, it is virtually impossible and not economically feasible to attempt to save the academic structure built in 1915. The shop building constructed in 1912 and the boys gymnasium built in 1929 could be brought into compliance with little difficulty. Since there is little potential for expansion of this site, construction of new academic facilities to accommodate a comprehensive high school would certainly be inappropriate. A thorough investigation should be conducted to determine if the existing gymnasium and shop facilities could augment a more restrictive educational program at the Polytechnic site.

BALBOA HIGH SCHOOL

GALILEO HIGH SCHOOL

POLYTECHNIC HIGH SCHOOL



ROOSEVELT JUNIOR HIGH SCHOOL

PRESENT ROOSEVELT JUNIOR HIGH SCHOOL

The district chose Roosevelt as the junior high school for in-depth study because of (1) their fondness for its exterior appearance, and (2) their desire to determine the feasibility of preserving it.

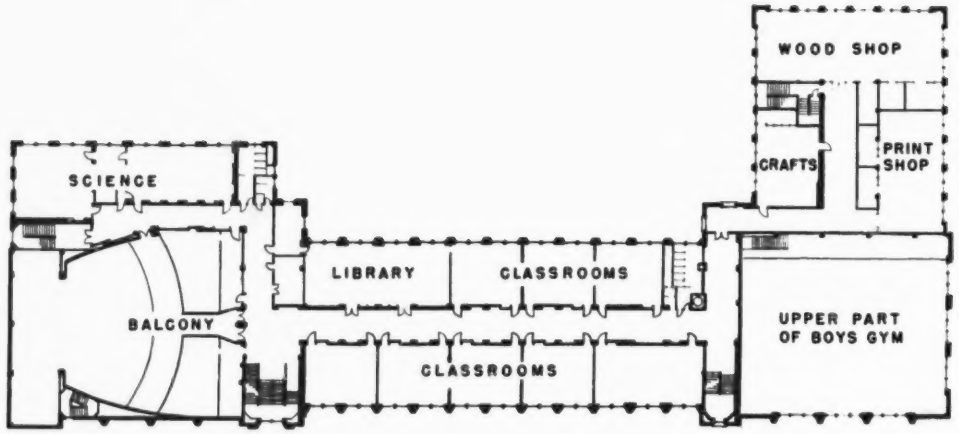
The red brick facing and handsome brick tower, both skillfully designed and delicately detailed, serve to belay the school's age and to categorize it as the district's best school, architecturally.

Although its plan is not typical of other junior high schools of its vintage, the spaces it contains are.

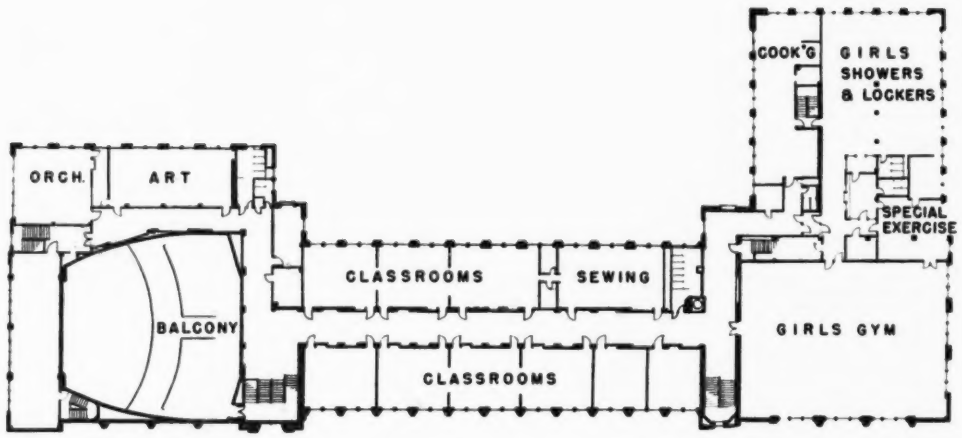
The gymnasiums are located in the southwest corner one above the other with access to the girls' gym from the third floor. Steel framed roof trusses span the gymnasium. It and the window mullions are covered with copper of rich patina. Shop areas are to the east of the gyms, adjacent to the locker room facilities. The 1000 seat auditorium is in the northwest corner backed by the music, science and one time art facilities. The main portion of the school contains three floors of academic classrooms with double loaded and excessively wide corridors. The cafeteria is located on the first floor, facing the play yard and opposite the small administrative area. The typically small library is on the second floor above the cafeteria. Presently there are 1020 students enrolled but the school is over-crowded because of specialty classes and the conversion of some classrooms to counseling areas and teacher preparation rooms. Adequate storage facilities are lacking and service to the cafeteria kitchen is unfortunately via the secondary student entrance and classroom corridors.

The small 2.2 acre site restricts outdoor areas which are further hampered by the existence of portable classrooms.

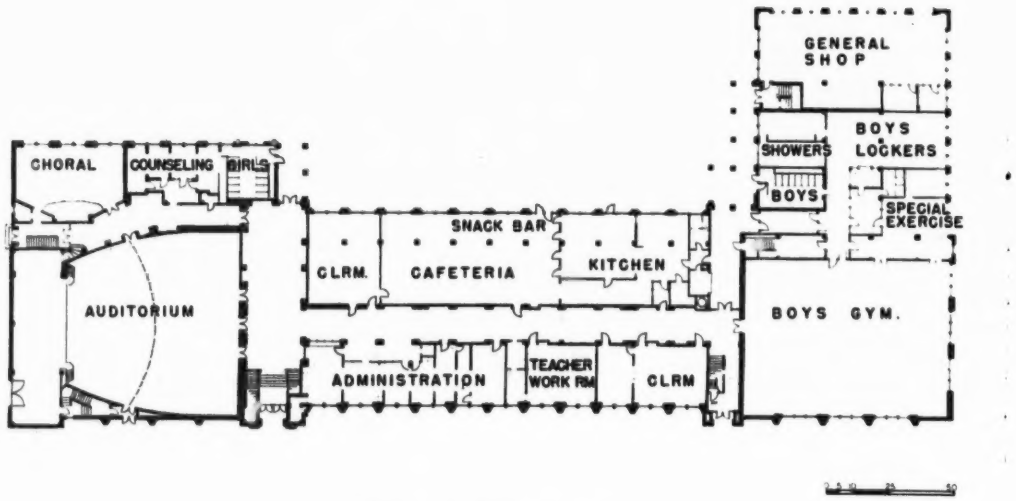
The roof of the single building is used for girls physical education when weather permits.



SECOND FLOOR PLAN



THIRD FLOOR PLAN



FIRST FLOOR PLAN

EXISTING FLOOR PLANS – ROOSEVELT JUNIOR HIGH SCHOOL

GYMNASIUM

CAFETERIA

MAKESHIFT CLASSROOM

A NEW PROGRAM FOR ROOSEVELT JUNIOR HIGH SCHOOL

San Francisco's present junior high schools (grades 7, 8 and 9) educational program is carried on in schools of large enrollment on very small sites, is patterned after the high school system, and creates the usual problem of a student becoming overwhelmed merely by the numbers.

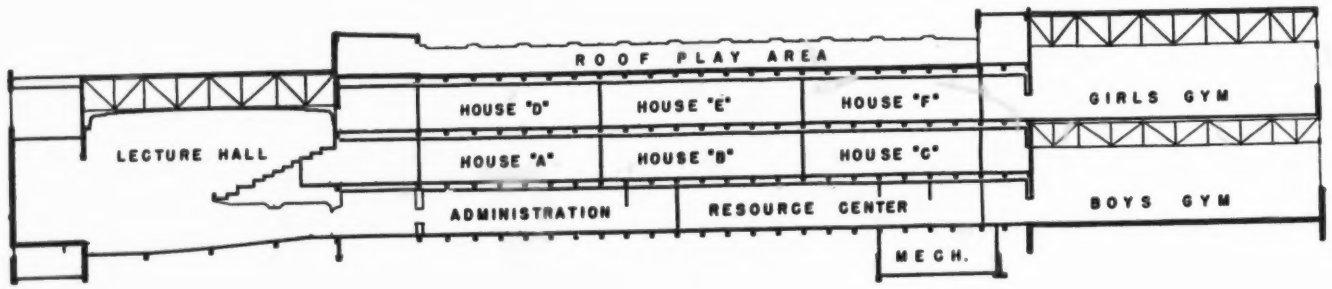
It is therefore proposed that the junior high school program be developed on the "house" principle just as proposed for the senior high schools, but that the capacity of each house be limited to 100 students rather than 250. The elementary program that follows, based on the principles of team teaching, also resembles a "house" in that three or four classes of approximately 25 students will be clustered around a shared multi-use center. Team teaching in the elementary schools will have exposed a student to several teachers during the course of instruction, just as in the junior high school. The problems of transition will be minimal and will at the same time prepare him for senior high school. The proposed scheme for Roosevelt Junior High School includes the addition of about 20,000 square feet of new area on three floors in order to provide large, flexible spaces for laboratory activities and a new student Cafeteria-Lounge. The community oriented cafeteria lounge will open directly on the playground and will be the student activity center of the school. The Resource Center is located on the first floor, adjacent to the playground but convenient to the administration, the faculty preparation rooms, and lunch room. It is anticipated that the use of the resource center will not be restricted and that student traffic will flow freely from there to the Cafeteria-Lounge. The proposed capacity will be 1200 students, divided into academic houses of 100 each. The auditorium will be divisible into six areas serving as Large Group Instruction spaces for each of the houses, or can be used as one area seating approximately 850.

Minimum work is contemplated in the gymnasiums and shops other than that required by law and renovation of the shower-locker rooms. The new addition to the north wing will create, on the second floor, expanded laboratory space for mathematics and science, and on the third floor a new unified music department and art department. As indicated on the plans, interior corridors have been eliminated in the academic central portion of the building in order to create the six houses. New open air corridor-balconies and a new central staircase will be added to the east elevation, facing the playground, to accommodate all major circulation through the school. The administration area on the first floor will be expanded to include new counseling facilities as well as expanded administrative functions. Each house will contain a classroom accommodating 25 students, a classroom accommodating 35 students (an operable partition will allow them to be combined), a seminar room accommodating up to 20 students, a team work center with two adjoining offices, and an independent study area accommodating approximately 55 students at one time. Students will spend one half of the school day in an academic "house", concentrating on academic subjects, and the other half of the day in activity areas such as physical education, science and mathematics laboratories, art and music studios, home science laboratories, or one of the industrial arts shops. A large typewriting classroom is provided but other business subjects would be encountered in the mathematics laboratory. A small classroom is adjacent to and opens into the Resource Center where students will be instructed in the use of this facility.

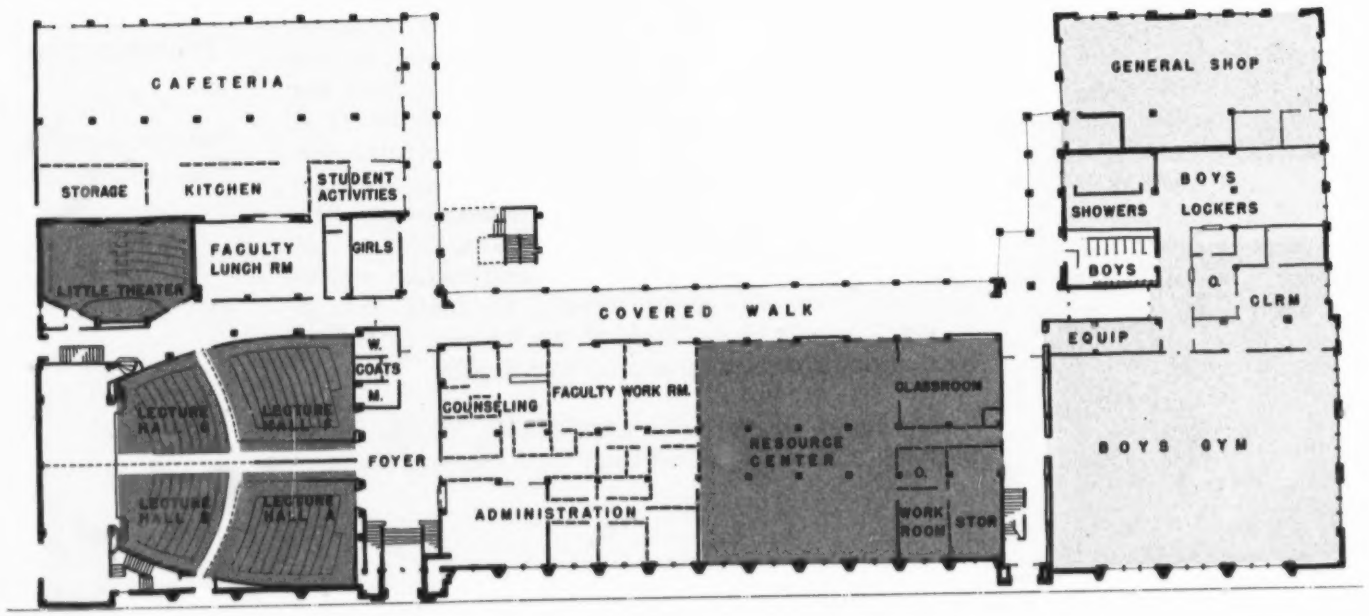
As at the high school level, UPDATING includes environmental improvement as well as reconfiguration of spaces.

Lighting, heating and ventilating, plumbing, acoustics and the aesthetic environment will undergo major change for the better.

Cost of the proposed new program and its implementation are discussed in subsequent sections of this report.



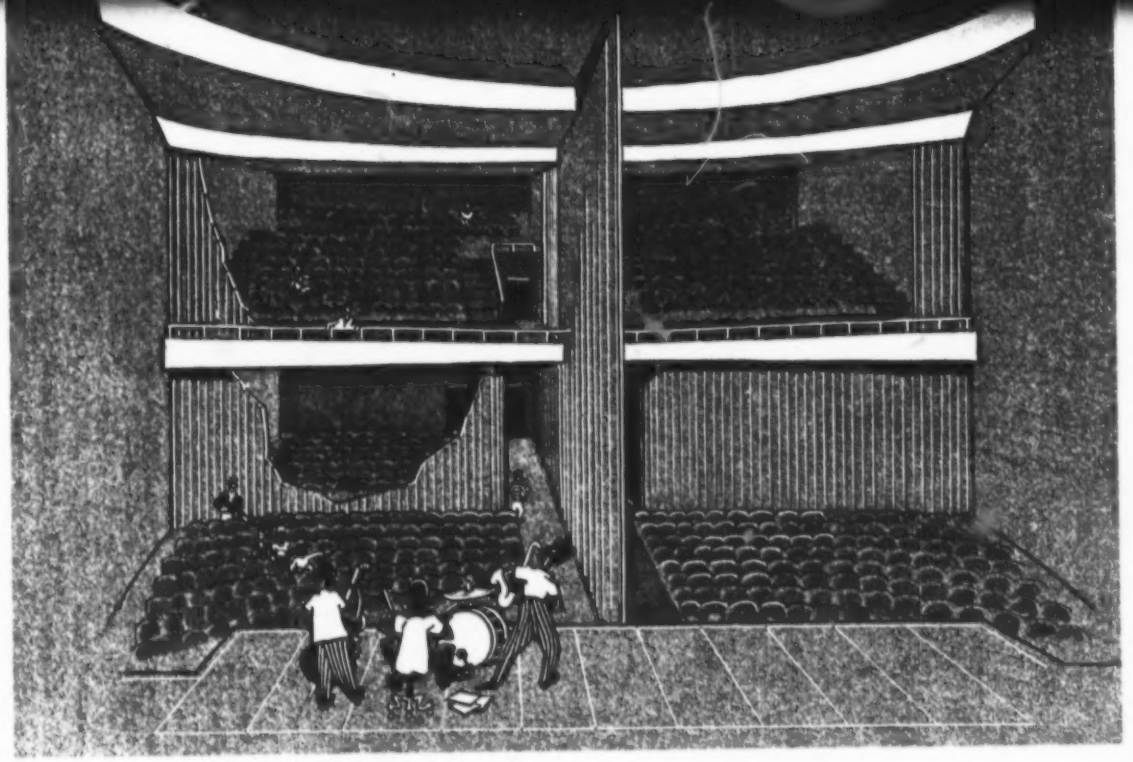
SECTION



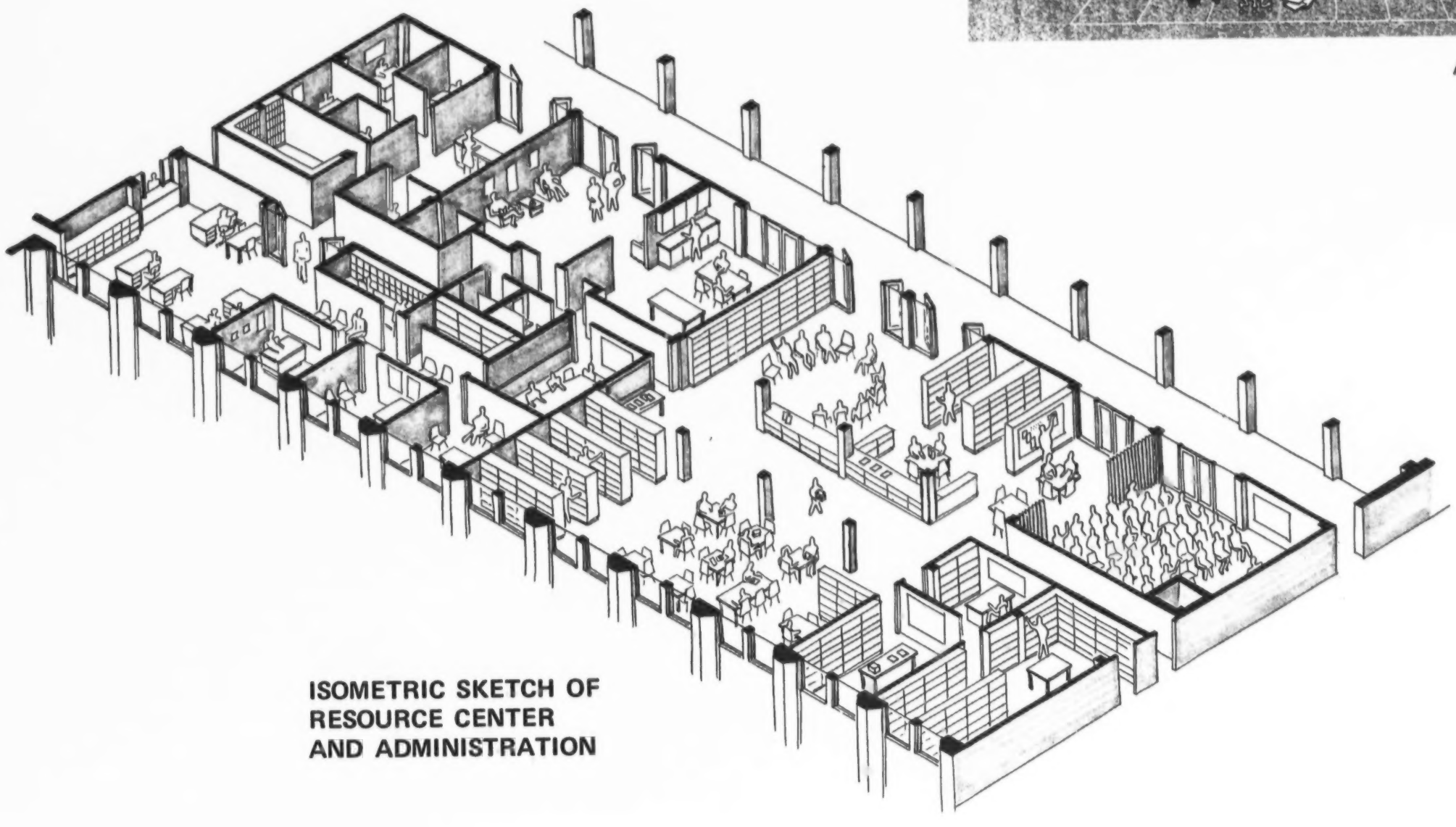
PROPOSED FIRST FLOOR PLAN

ROOSEVELT JUNIOR HIGH SCHOOL

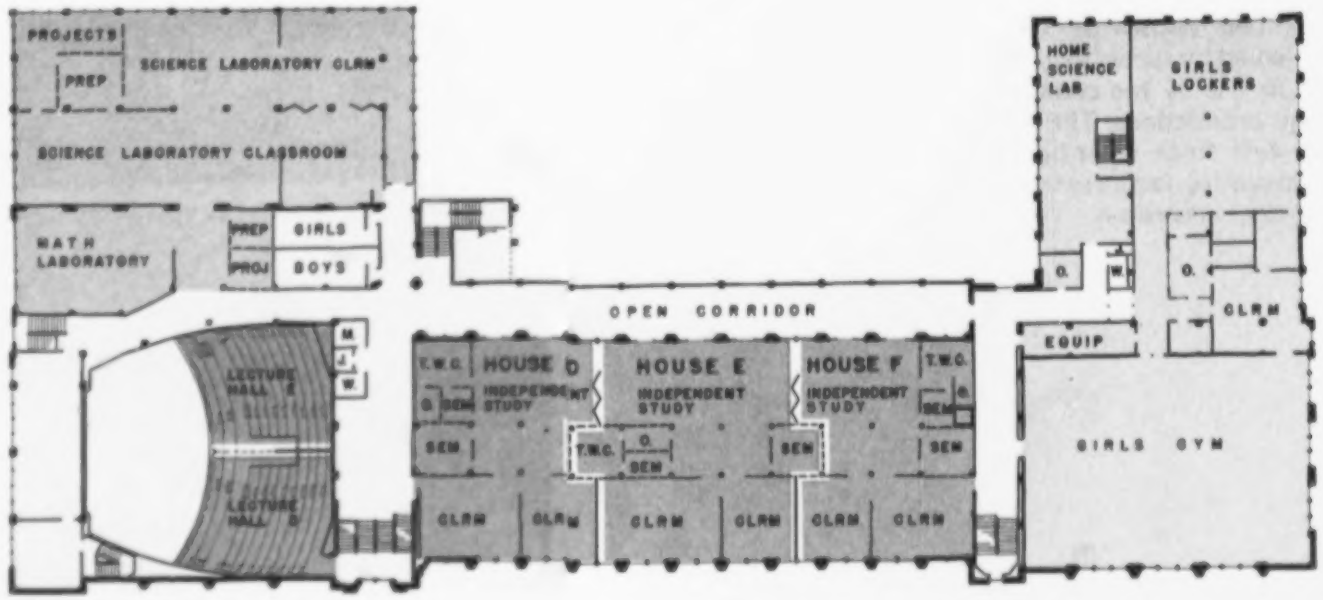
It is suggested that movable walls be installed in the existing auditorium at Roosevelt Junior High School to facilitate a variety of uses including the creation of six large group instruction areas for the proposed houses of 100. Poor acoustics would be remedied by reconfiguration of its ceiling thus furthering its use by the community as a little theatre or for large productions. The isometric sketch below depicts the first floor reconfigured to provide expanded administrative facilities and a large resource center with adjacent classroom.



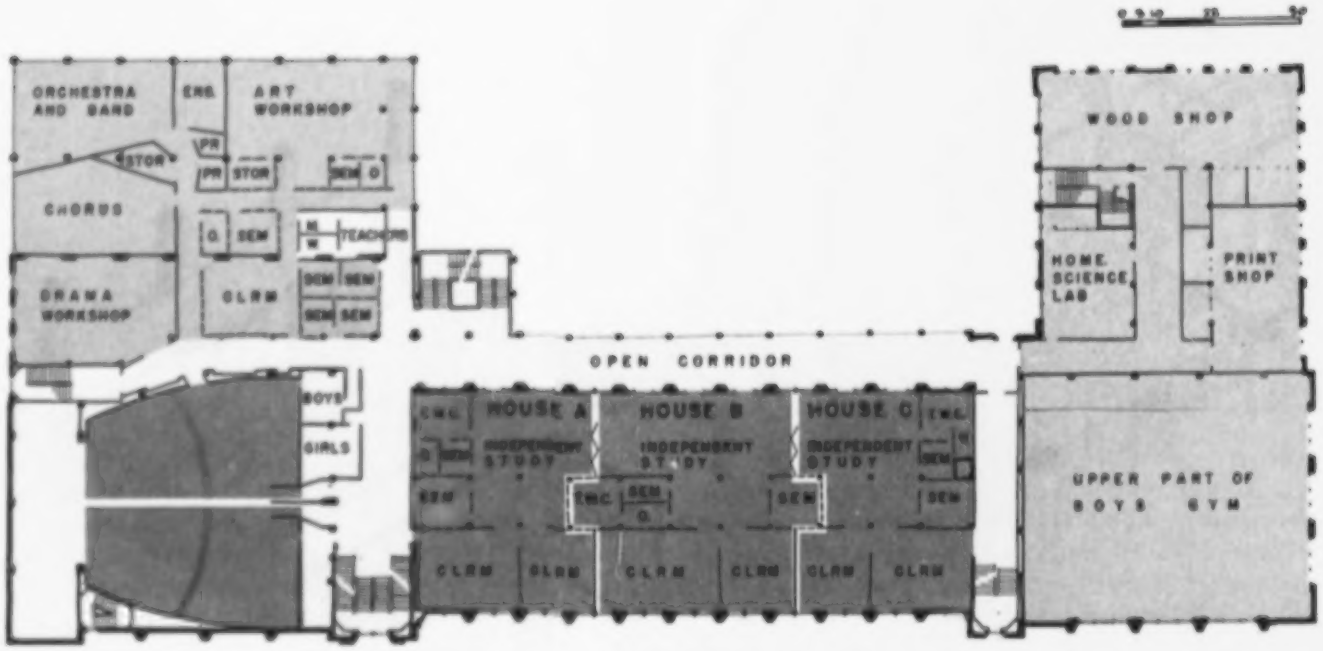
AUDITORIUM



ISOMETRIC SKETCH OF
RESOURCE CENTER
AND ADMINISTRATION



PROPOSED THIRD FLOOR PLAN



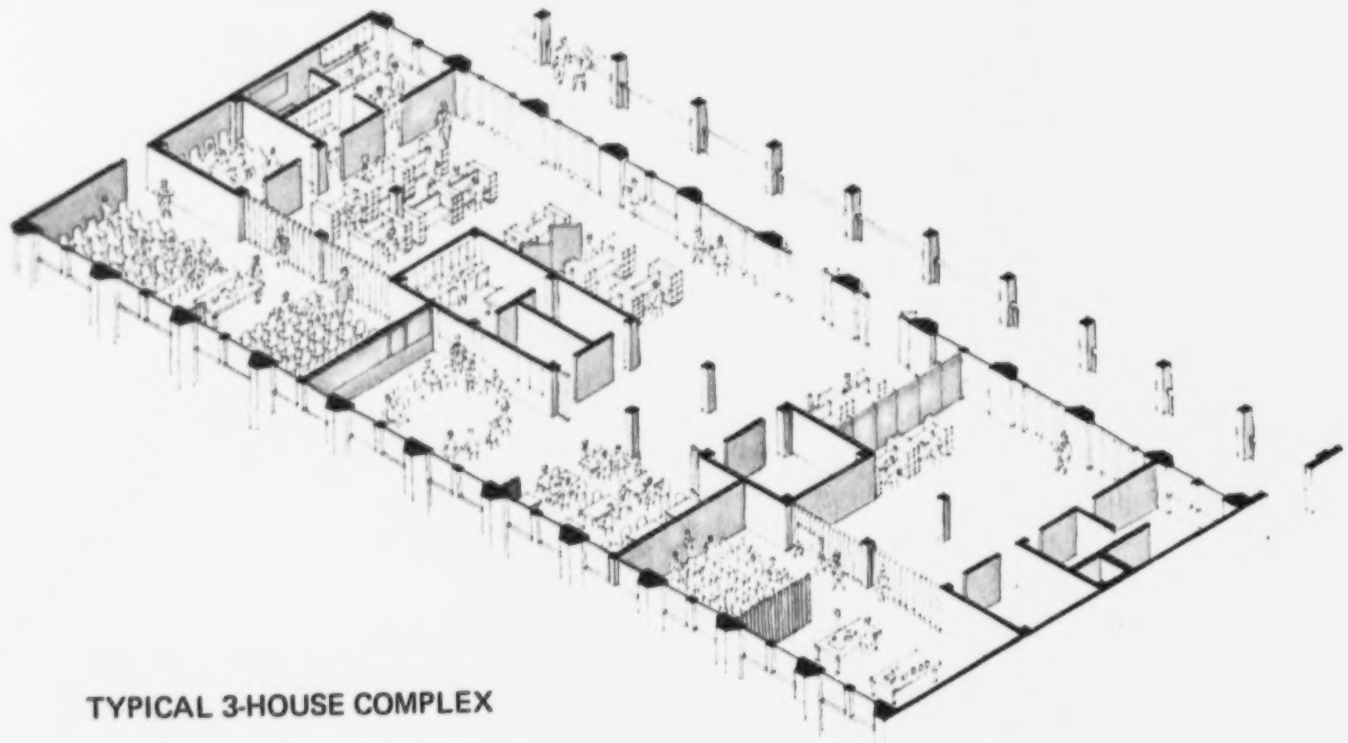
PROPOSED SECOND FLOOR PLAN

ROOSEVELT JUNIOR HIGH SCHOOL

SUGGESTED ADDITION

The above sketch suggests covered balconies to replace interior corridors, a new covered stairway and the new wing housing a cafeteria at ground level and laboratory teaching spaces on the two floors above.

The isometric sketch at right depicts three new houses, each accommodating 100 students, as suggested for the second and third floors of the existing building. Each house includes areas for independent study, combinable classroom space, a seminar room, a teacher work center, and two offices.



TYPICAL 3-HOUSE COMPLEX

APPLICABILITY OF ROOSEVELT JUNIOR HIGH APPROACH TO OTHER JUNIOR HIGH SCHOOLS

There is little similarity in the other junior high schools in this study, and Roosevelt is most atypical of the eight, being the smallest and the only one with brick and brick veneer exterior walls. Of the other seven, Portola, Horace Mann and Francisco were built in many increments with some additions in the last three or four years; all three were originally designed as elementary schools, and all have small level floored assembly halls instead of full scale auditoriums. The other four—Presidio, Everett, Aptos, and James Lick—are alike and more closely resemble a typical high school. Each was designed and built at one time and each has a large auditorium.

Aptos is built on a small and sloping site making any additions undesirable. The large auditorium is centrally located to the double loaded corridor planned academic areas, a desirable feature for adaptation of the "house" plan and with easy access to large group instruction areas created by making the auditorium divisible. No work would be contemplated in the gymnasium areas other than refurbishing the locker rooms. The industrial arts complex is huge and well equipped. Some of these spaces would be converted to art department use creating a desirable integration of these two curriculum areas. The cafeteria would be relocated to the first floor area between the administration spaces and the gymnasiums, and would open onto the play yard. A new resource center would be developed in present cafeteria area, and between the administration and the new cafeteria. The two upper floors would accommodate the "houses". The least desirable feature of the present plan is the separation of orchestra and choral rooms by the auditorium, requiring circulation around or thru it. It is proposed that new choral and band rooms be constructed on top of the existing orchestra room, concentrating this department in three levels adjacent to and north of the auditorium stage. The present choral room could then be used as a drama workshop, little theater, or additional large group instruction space.

Everett Junior High School has the largest auditorium of all junior high schools in this study. It is proposed that a new floor be constructed at the balcony level, as was proposed at Mission High School, and the new area at the first floor level be devoted to a cafeteria-lounge, opening into both court yards, and flanked in part by counseling offices and student activity areas. Existing academic classrooms behind and centered on the auditorium stage would be converted to academic "houses" and would be accessible to large group instruction spaces created by dividing the remaining auditorium. A resource center would be developed on the first floor, under the academic "houses", and opening directly to the cafeteria-lounge, and overlooking the playground to the west. Shop areas and art rooms would remain in the southwest corner between the academic houses and the boys' gymnasium, and laboratory activity areas for science, mathematics, home science, and business courses would be located to the rear of the girls' gymnasium. A new music complex would be created on the third floor in the existing cafeteria area. Existing gymnasiums would be retained and locker rooms refurbished.

Both Presidio and James Lick Junior High Schools have smaller auditoriums, about the same size as at Roosevelt, and located asymetrically to the academic classroom areas. These auditoriums, too, would be divided to form large group instruction spaces, and, again as at Roosevelt, new exterior balconies would be constructed to provide more direct access from the academic houses proposed in the existing classroom spaces on the second and third floor. The first floor at both schools would accommodate a large resource center as well as administrative and counseling areas. At both schools, the gymnasiums are adequate so only refurbishing of the locker room facilities is contemplated. At James Lick, the present cafeteria is inadequate and the location forbids logical expansion. It is therefore proposed that it be adapted to accommodate the science laboratories and a new Cafeteria-Lounge be constructed adjacent to the auditorium and opening onto the play yard. Shop facilities would remain in the basement, borrowing some space for art rooms and converting the present band room to art. Home science, mathematics and business laboratories, and music facilities would be developed on the second floor flanking the auditorium and including space above the new cafeteria. At Presidio it is proposed that a new Cafeteria-Lounge be constructed flanking the auditorium and between the administration area and the boys' locker room. The academic area will accommodate eight houses rather than six, so two additional large group instruction areas would be constructed over the new Cafeteria-Lounge, and the present cafeteria space used as a science laboratory.

JAMES LICK JUNIOR HIGH

HORACE MANN JUNIOR HIGH

PORTOLA JUNIOR HIGH

APTOS JUNIOR HIGH

EVERETT JUNIOR HIGH

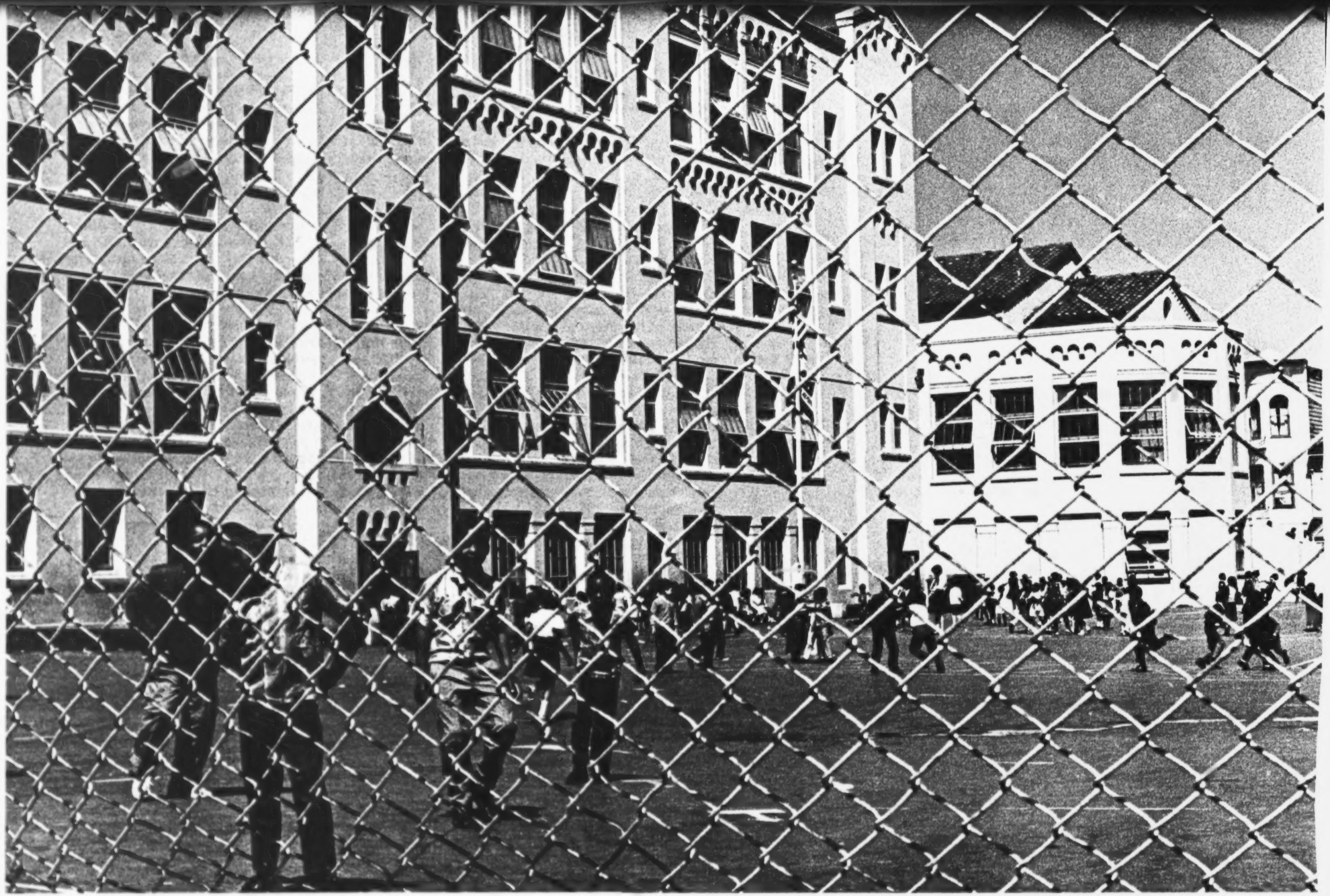
FRANCISCO JUNIOR HIGH

PRESIDIO JUNIOR HIGH

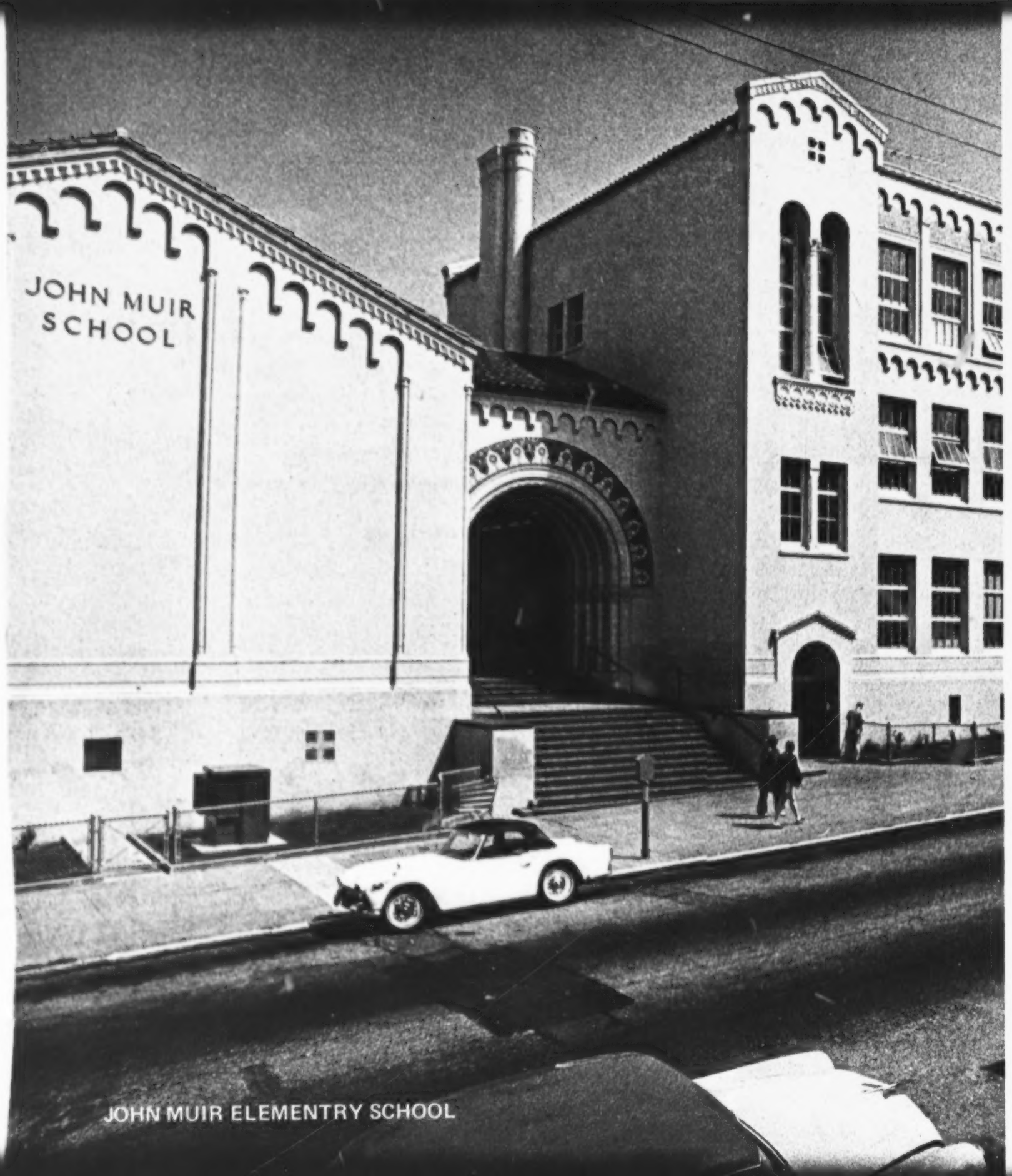
Portola Junior High School includes the oldest building in the project—part of the academic classrooms and the cafeteria are housed in a building constructed in 1910 as an elementary school. Interior partitions and roof framing are of wood construction, and the building shows obvious signs of its sixty year usage. There is no doubt that it should be replaced. The main academic building and the shop facilities were constructed in 1928, the auditorium in 1940 and the music and gymnasium facilities in 1960. The latter are obviously in good shape and no work would be included in them in this project. The auditorium does comply with the Field Act, but is of little use educationally. It is 54 feet by 76 feet with a 26 foot ceiling height and a level wood floor, and will seat approximately 600 in portable seating. It could be divided into three large group instruction spaces but would need considerable acoustic and other environmental improvements to make it adaptable to audio-visual or lecture use. Instead, it is proposed that it be divided into two or three spaces, mezzanines installed in each, and that it be used for laboratories and an "art barn". The 1910 structure would be replaced with a new structure containing a resource materials center on the first floor and large group instruction spaces on the upper floors. A new cafeteria would be constructed on the first floor adjacent to the resource center, having direct access to the court yard for indoor-outdoor eating and study, and would also overlook the play fields to the west.

Horace Mann Junior High School was converted during the design stage from an elementary school to a junior high school, the first in San Francisco. The major portion of the school including the academic area, auditorium, girls' gymnasium and shops was built in 1924. The boys' gymnasium and locker rooms, and the cafeteria were built in 1940 and do conform with the provisions of the Field Act. This school is situated on a small site and rambles all over it. The buildings cover nearly half of the two and one half acre campus and usable yard play space amounts to barely an acre—bisected by a covered passageway. The academic areas could accommodate the proposed "houses" and the existing auditorium altered for use as laboratory space as proposed for Portola Junior High School, but to attain the educational goals already assumed for this report, construction of a new cafeteria, a new resource center, and areas for large group instruction would be required. There is insufficient room on this site for such construction while maintaining outdoor play area even if the awkward locations of the gymnasiums and shops were tolerable. If it were possible to expand the site, a detailed study should be made to determine if these compromises would handicap the educational program. Horace Mann is the only school under this study which has neither combinable gymnasiums or a large auditorium that can accommodate large assemblies of people. Thus, if the site were expanded and large group instruction facilities constructed, they should be designed in such a way that several could be combined to serve this function.

Francisco Junior High School is also built on a small site, the smallest of all junior high schools, and is even more awkward as the gymnasiums, locker rooms, cafeteria, music facilities and three classrooms are located in a separate building, constructed in 1931, across the street and half a block away from the main academic element. The main structure was built in 1926 as an elementary school and resembles other elementary schools in this project, including the typical flat floored assembly hall. The two story addition built in 1960 houses handsome art and shop facilities and a generous library. In order to accommodate the proposed junior high school program in this school it would be necessary to construct new facilities for large group instruction, and a comfortable and convenient Cafeteria-Lounge. Since the site is small, the assembly hall would be razed and a new three story structure built in its place to house the large group instruction facilities, with the Cafeteria-Lounge located on the first floor. The existing classroom building would be converted to academic "houses", retaining the present library space as a resource center, and converting the present cafeteria to science laboratories. Because of the remote location of the annex building, the above scheme is considered workable only if the bisecting street were closed and developed as part of the school yard, or, as a poor alternate, either a bridge or underpass constructed to tie this building in with the existing campus. Like Portola Junior High School, Francisco would have to rely on the combined gymnasiums as the only interior space for accommodating large assemblies.



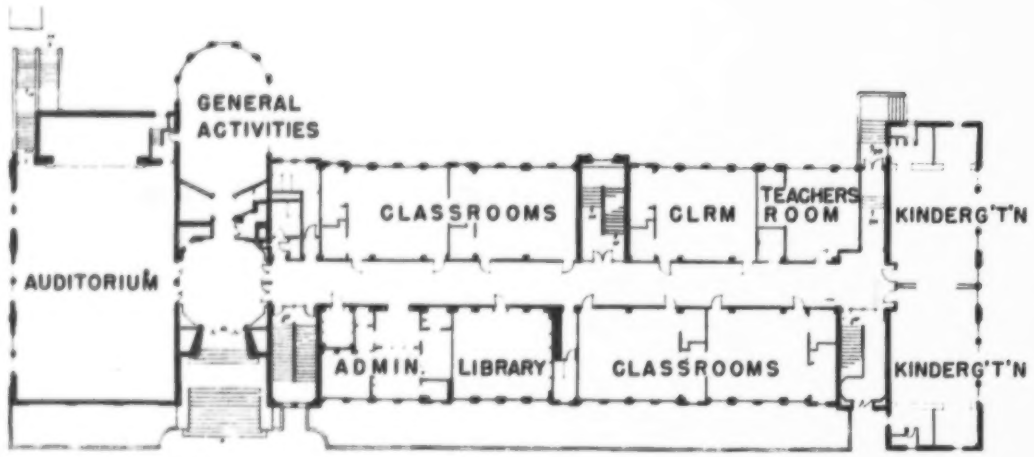
JOHN MUIR ELEMENTRY SCHOOL



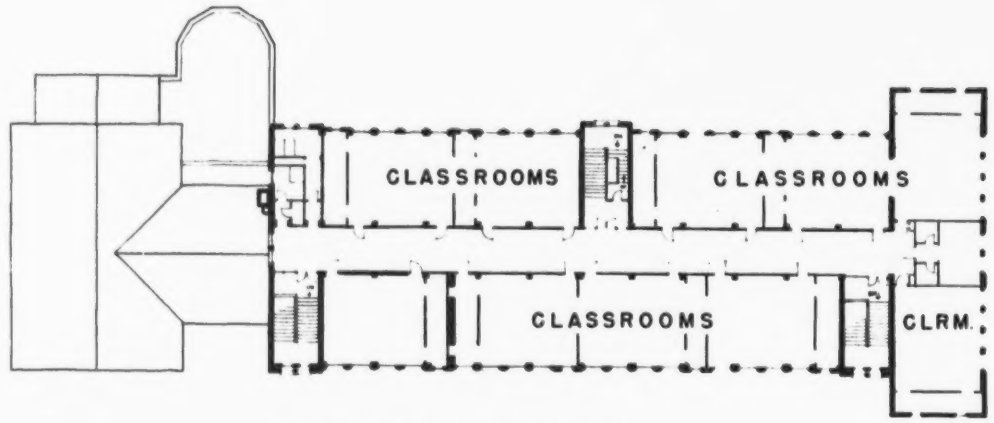
JOHN MUIR ELEMENTRY SCHOOL

PRESENT JOHN MUIR ELEMENTARY SCHOOL

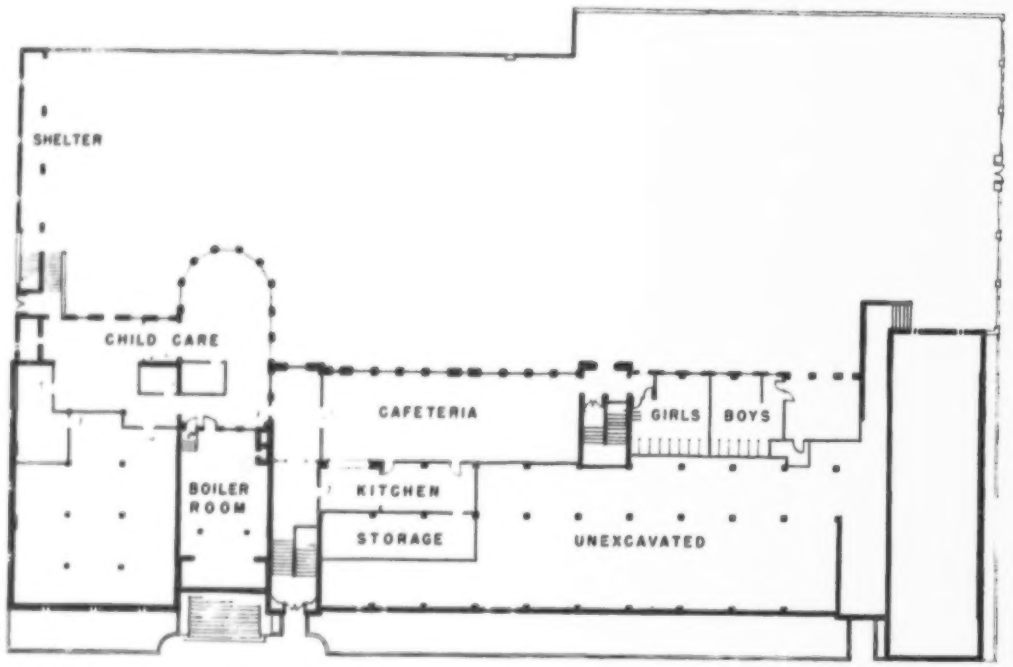
John Muir School, in plan and in architectural design is typical of most of the 19 elementary schools in this study. It was built in 1928 and contains a total of 27 classrooms on three floors flanking 12 foot wide corridors. In addition to the classrooms, the school contains a general activities room, an assembly hall, a small administrative suite, a library and a teachers' lunch room. There is a fair degree of slope to the very small 1.8 acre site so that the rear and play yard side has a full basement facing the yard housing rest rooms, cafeteria and kitchen. In 1969 a small child care center was developed in the basement consisting of two classrooms, rest room facilities, offices and a separate kitchen. This school is located in a section of the city with a very high population density. At the present time the school houses approximately 700 students, is overcrowded and all sixth graders attend classes in a neighboring church youth center. In addition, 180 are bused to schools in other areas of the city. The child care center has operated for the last 12 years in the auditorium and is administratively separate from the school. The General Activities Room currently houses two kindergarten classes. The cafeteria is too small for the current enrollment. Although minor "modernization" work (new lighting fixtures, acoustic tile on ceilings, painting) has been accomplished in recent years, the school is woefully outmoded environmentally and its rigid, fixed plan prohibits many functions that the teaching staff would like to institute.



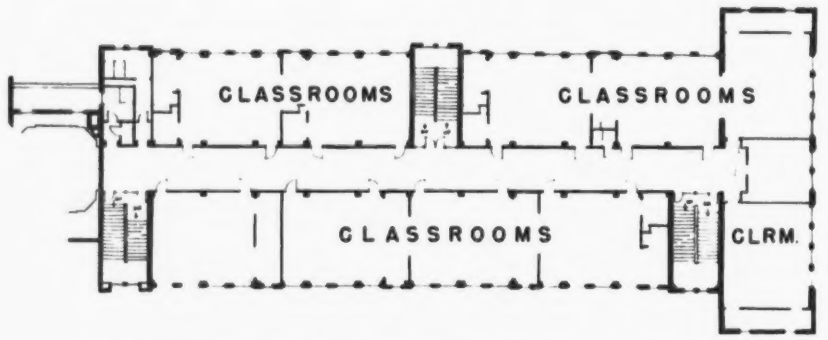
FIRST FLOOR PLAN



THIRD FLOOR PLAN

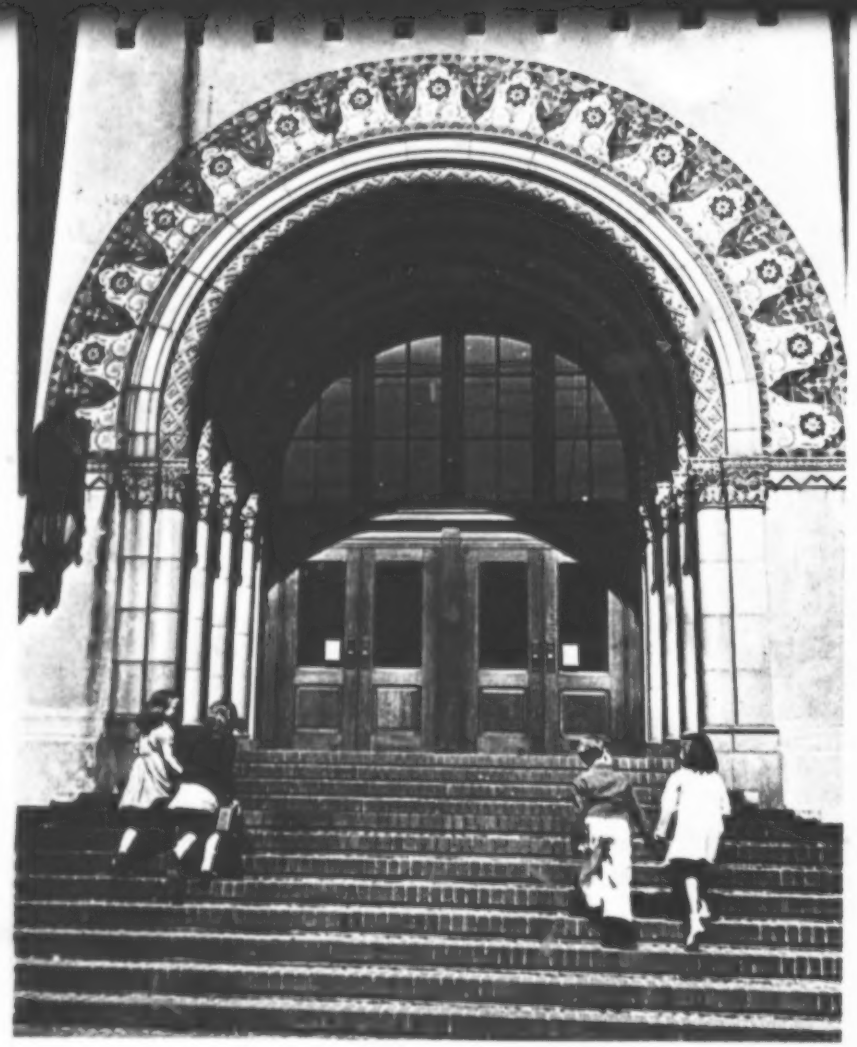


GROUND FLOOR PLAN



SECOND FLOOR PLAN

EXISTING FLOOR PLANS– JOHN MUIR ELEMENTRY SCHOOL

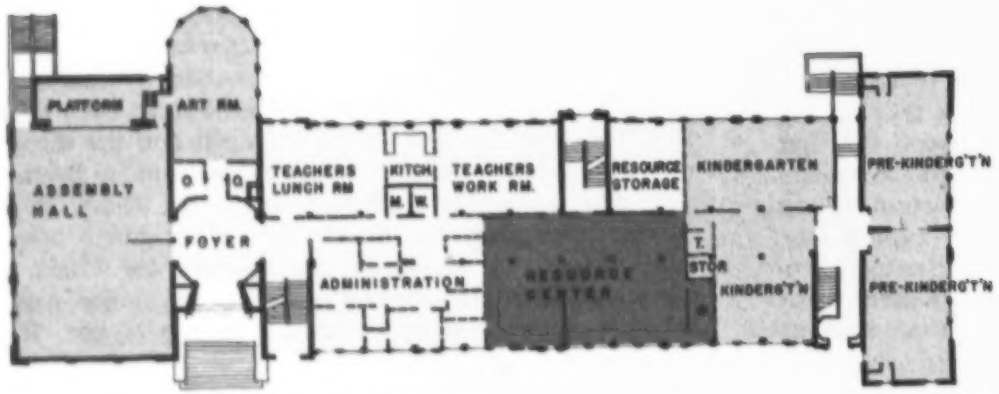


A NEW PROGRAM FOR JOHN MUIR ELEMENTARY SCHOOL

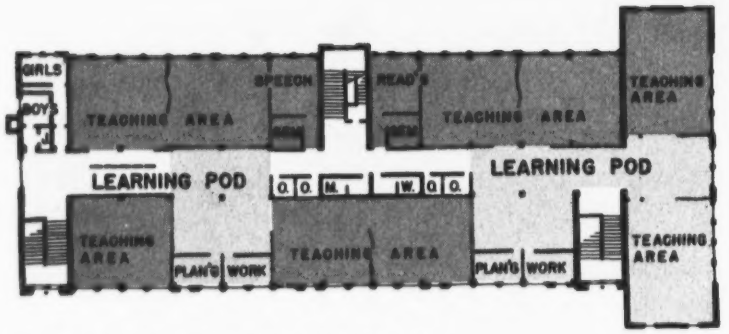
Recent planning of a new Bayview Elementary School in the Hunter's Point area of San Francisco has caused considerable interest, both in that neighborhood and in the city as a whole. Such interest has merited more than the usual attention from the central school administration staff and a new elementary school education program was written after considerable research on the part of a good many members of the community. It is, perhaps, the first time in the city that parents and students have made such a valuable and practical contribution to an educational program. Heretofore, the typical elementary school was planned with a designated number of classrooms, based on required enrollment, with the addition of a "multi-use" space when budgets couldn't substantiate a separate assembly hall and cafeteria, and with the addition of a few folding partitions to insure token flexibility. The Bayview Elementary School Educational Specification defines the various learning experiences and techniques desired and challenges the Architect to design adequate facilities to house them. This commendable document was used in determining the potential of the John Muir building to house future educational processes, and will be used as a guide in considering the potential of the other 18 elementary school buildings. Compromises are inevitable, and, in some cases advisable, but by adjusting capacities it would be possible in most of the buildings to provide a similar educational situation. The Bayview School is considered to be an "Experimental" school and the program includes a number of facilities for observation, which are not and could not be included in John Muir School or the other elementary schools in this study. The site of the Bayview School will be considerably larger than sites of schools in this study, so requirements for outdoor access and site orientation cannot be specifically met.

In adapting John Muir School to these criteria, corridors have been for the most part eliminated, and existing stairs will provide the primary means of circulation. In the upper two floors, classrooms have been clustered around multi-use spaces to form "learning pods". Each learning pod has a teacher's planning center and an aid's work space. Each pod also has two small counseling rooms and a seminar room. On the second floor there is a Nurse's suite, the Assistant Principal's office (large enough for tutoring of small groups), an office for the curriculum coordinator, and a series of rooms to be used in teaching the educationally handicapped. On the third floor are included areas for the speech therapist and the diagnostic reading specialist. Rest room facilities for boys, girls, men and women are included on all floors. The greatest changes occur on the first floor which provides only four classroom spaces—two for kindergarten and two for pre-kindergarten. The major area on this floor is devoted to a resource center, to teachers planning areas, and to administrative offices and conference rooms. A small kitchen is centrally located so that it can be used in conjunction with the auditorium, the conference rooms, the teacher lunch room and other administrative areas. The general activities room has been re-designated as an art room with adjacent offices for the art specialist and the music specialist. An operable partition will be installed in the assembly hall to broaden the use of that space. No changes are suggested for the ground floor, other than general face-lifting. The cafeteria would adequately serve a smaller enrollment, and though it might be more convenient if located in the assembly hall, it would certainly curtail other uses for that room. Because it is felt that present cafeteria space would be inappropriate for other assignment it is recommended that it continue in its present use.

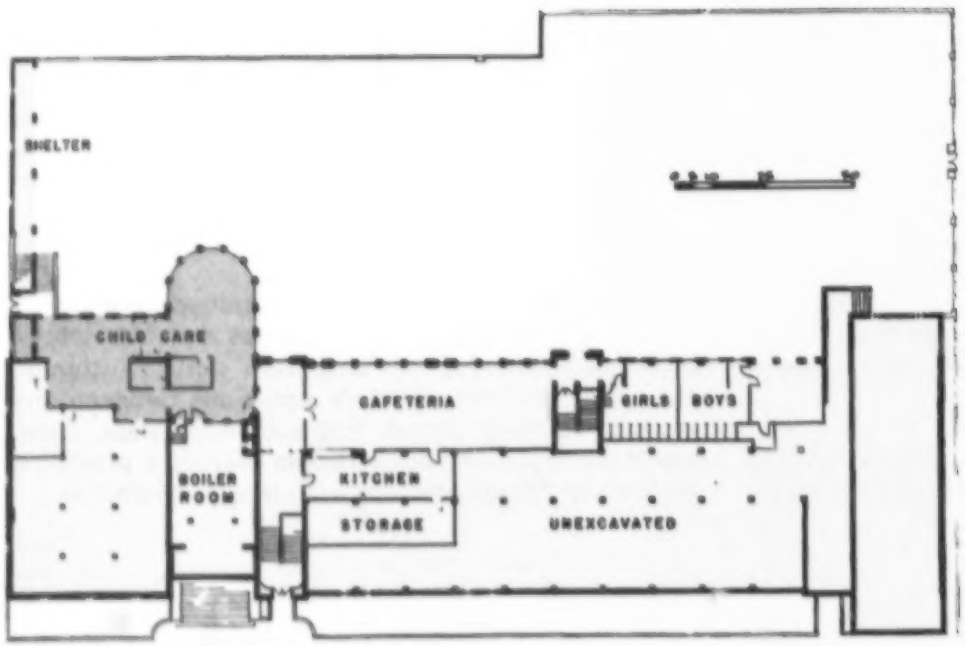
The revised layout would accommodate 610 students in 21 regular teaching spaces and five special areas, not including the child care center. Although the plans indicate operable partitions between the various teaching spaces and multi-use areas, these could be replaced with movable furniture providing an interior "landscape" for even greater flexibility.



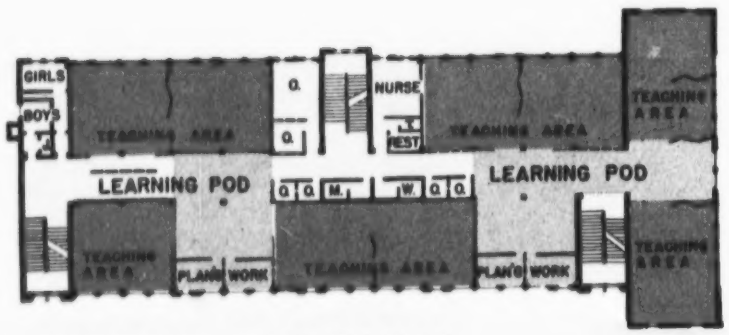
PROPOSED FIRST FLOOR PLAN



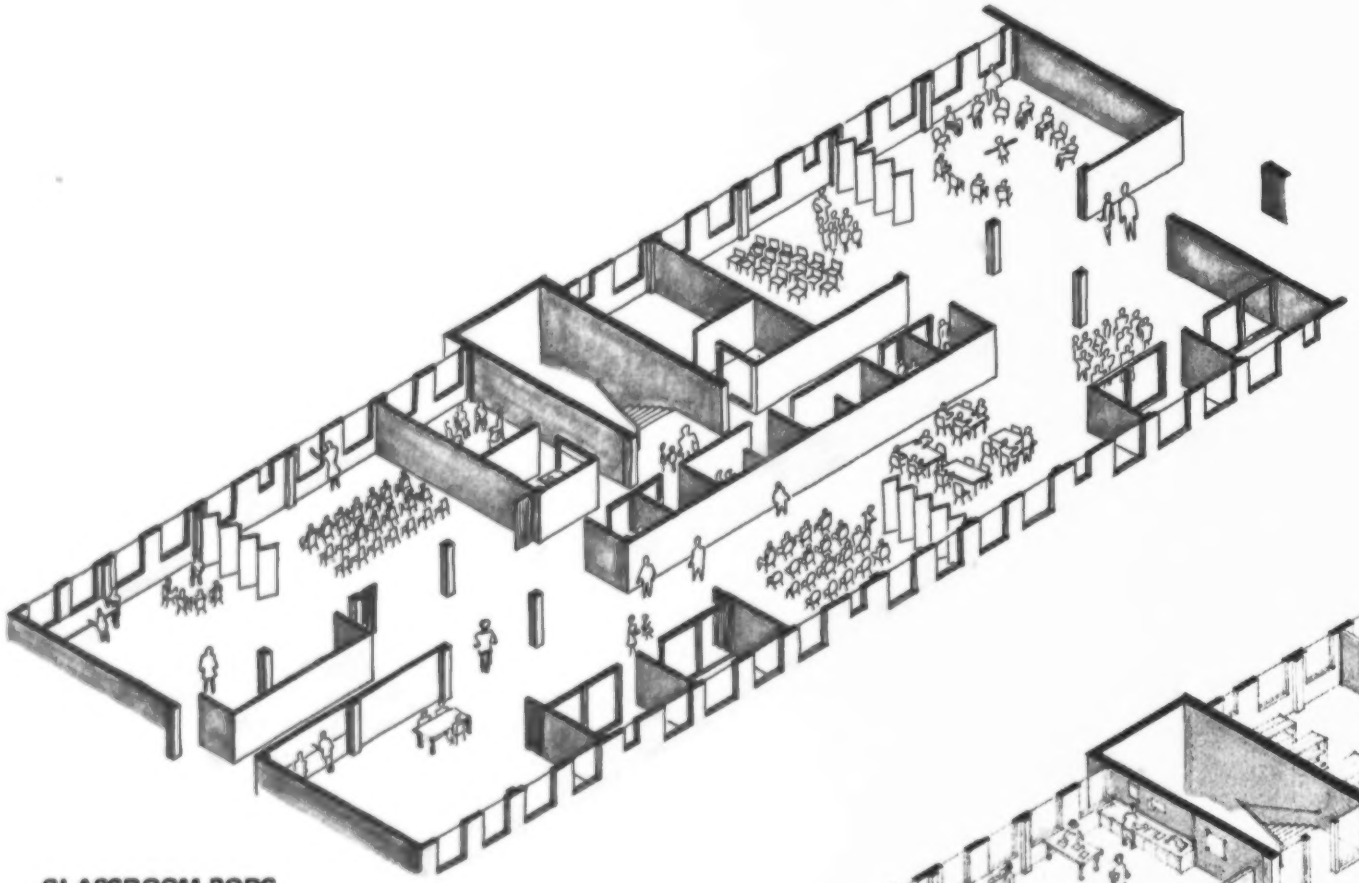
PROPOSED THIRD FLOOR PLAN



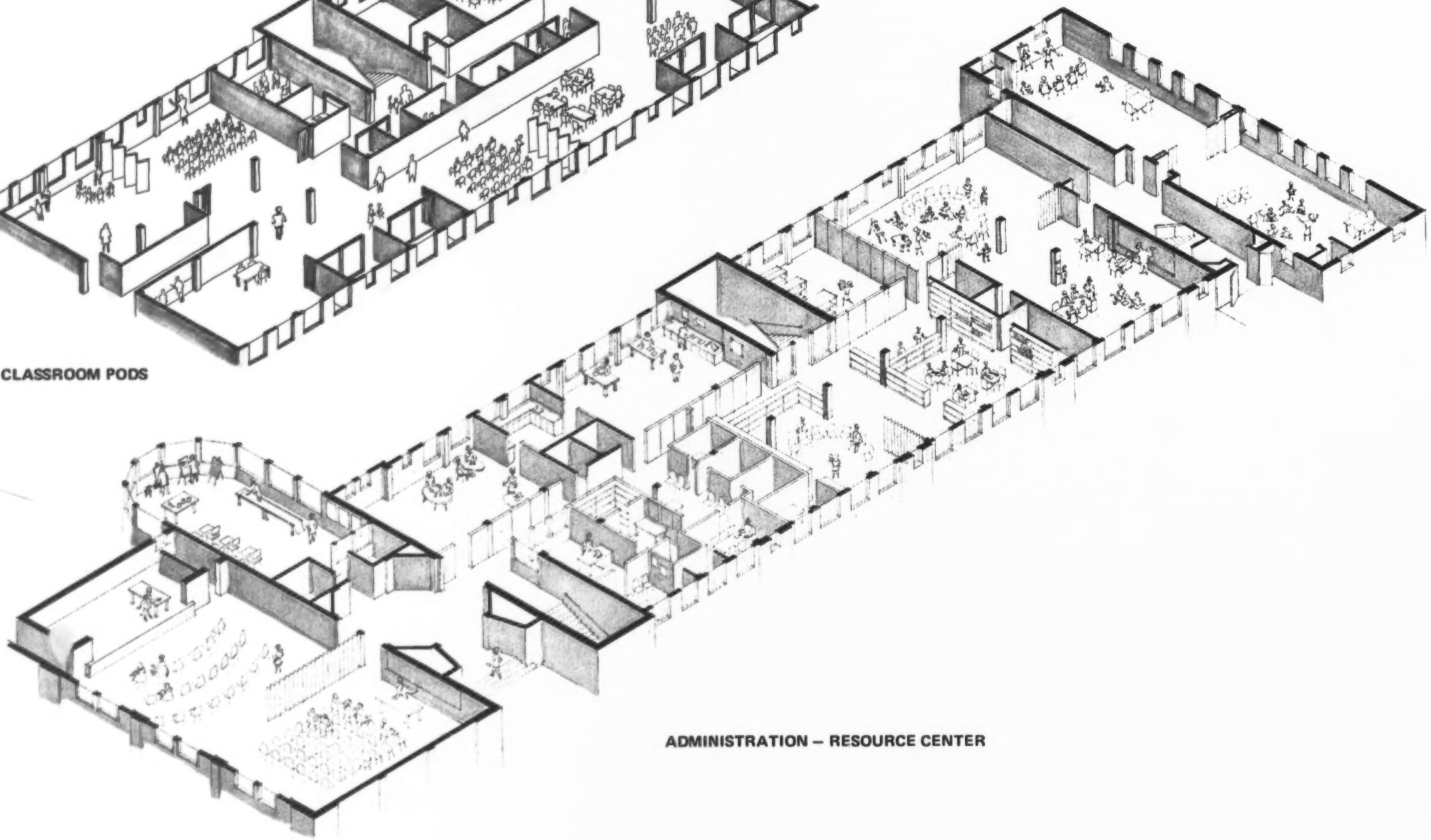
PROPOSED GROUND FLOOR PLAN



PROPOSED SECOND FLOOR PLAN



CLASSROOM PODS



ADMINISTRATION – RESOURCE CENTER

APPLICABILITY OF THE NEW JOHN MUIR PROGRAM TO OTHER ELEMENTARY SCHOOLS

In considering the applicability of the John Muir concept to the other 18 elementary schools, double loaded corridor plans are most receptive. All but three, Grant School, Emerson School, and Commodore Stockton, contain double loaded corridors. Of the remaining 15, the three smallest, Geary, Andrew Jackson, and Sunnyside, with 10, 11, and 13 classrooms respectively, are not large enough to merit a resource center or administrative facilities as proposed at John Muir. With minor adjustments, the John Muir Program would be applicable to Alamo, Alvarado, Dudley Stone, Edison, Hawthorne, Lafayette, LeConte, Raphael Weill, Sanchez, Sherman, West Portal and Winfield Scott Schools. Grant School is located on a small site in the middle of a block and the school is laid out such that the play yard abuts only part of one property line, the building plan forming a large "C". The plan itself incorporates mostly single loaded corridors, which would not allow the expansive areas desired. The auditorium is located on the lowest level, virtually a basement, making access awkward. The small site precludes expansion and the existing plan would not permit development of a centrally located resource center. More than half of the present students are bused in, also true of other schools in the neighborhood, making it questionable whether a school should be sustained on this valuable site.

Commodore Stockton School is also located on an expensive but small site and possesses only limited play space. In contrast to Grant School, Commodore Stockton is extremely crowded and the residents of this high density community are quite vocal against having their children transported to less crowded schools in other parts of the city. The oldest section was constructed in 1915, an annex was constructed in 1924 (across the street), and additions were added to the main building in 1947, 1951, and 1957. Classrooms in the annex and in the 1951 and 1957 additions are serviced by single loaded corridors, again making the inclusion of expansive areas difficult, if not impossible. There are presently 28 classrooms in the main building and its additions, and 11 in the annex, housing 1200 students. Despite the new additions, the auditorium and the gymnasium, it is not felt that this school would merit rehabilitation within the scope presented by this study, and until the possibility of expanding the site or relocating the school is explored. If neither is possible, the demolition of the original building and the annex should be considered and the construction of high-rise classroom space investigated.

Emerson school is based on a single loaded corridor plan. Although the lower floors are concrete frame, the roof is constructed of wood trusses supported on wood columns. The building lacks shear walls necessary to resist lateral forces encountered in earthquakes, and contains many hollow clay tile interior partitions which must be removed.

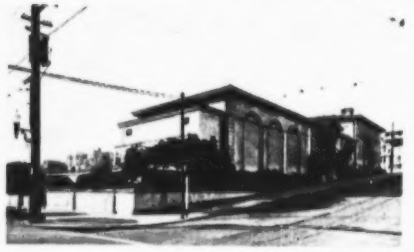
ALAMO

ALVARADO

ANDREW JACKSON

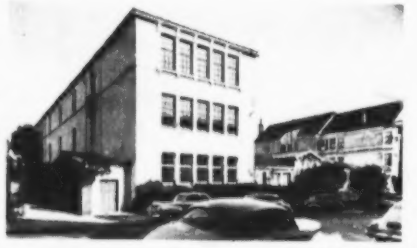
COMMODORE STOCKTON

DUDLEY STONE


EDISON

EMERSON

GEARY


GRANT

HAWTHORNE

LAFAYETTE

LECONTE

RAPHAEL WEILL

SANCHEZ

SHERMAN

SUNNYSIDE

WEST PORTAL

WINFIELD SCOTT

COST CONSIDERATIONS

This study, as noted earlier, is preliminary to an actual updating program for each individual school. An extensive survey to determine the condition of all elements of all schools was not possible within the limitations of this study. However, areas of recent modernization were noted and consideration of these existing improvements is included. Cost figures for the three in-depth schools were used to project estimates and recommendations to the other twenty-eight buildings in the study.

The consulting structural engineers conducted field tests, investigated thoroughly, and developed itemized costs for the structural work required to make Mission High School, Roosevelt Junior High School, and John Muir Elementary School conform to current construction requirements. This detailed information has been submitted to the Board of Education in a separate report. On the basis of these costs and a visual inspection of the other 28 schools, as well as examination of the construction drawings, estimated costs for structural work have been derived, and are included in the chart on the following pages. Where major educational rehabilitation is anticipated a unit cost of $18.20 per square foot of floor area was used, broken down in the following manner: $1.20 for demolition and removal of existing partitions, casework and other undesired materials; $2.00 for new partitions, including operable (except in auditoriums); $1.00 for new floor covering; $3.50 for new heating and ventilating; $4.00 for new suspended acoustical ceiling, lighting and power distribution; $2.50 for new plumbing distribution and fixtures; and $4.00 for miscellaneous expenses to existing items and finishing. In areas where less work is anticipated, the above unit prices were also applied, and in areas where no rehabilitation is anticipated, $.50 to $1.00 was included for patching and repairing after structural work is accomplished.

Lump sum estimates were included for work in the auditoriums of the junior and senior high schools. Where new construction is contemplated, it was included at the rate of $35.00 per square foot for junior and senior high schools and $30.00 per square foot for elementary schools—the same amount used to determine the respective percentage of replacement costs. Since there is no time schedule as yet for any of this construction work, no anticipated construction cost escalator has been included and the above costs are those estimated for the spring of 1969. Estimated costs for all schools were derived in the same manner as the tabulations included for the three schools studied in depth. Columns on the chart indicate the estimated costs for the required structural work alone as well as a greater amount to include patching, repairing and design fees if no further rehabilitation is undertaken concurrently, a practice which is certainly not to be recommended but the figures are included to give a basis of comparison. The column showing expenditures for maintenance and improvements in the last five and ten years is included as an indication of the minimum amounts that might be anticipated for a similar period should only structural work rather than total rehabilitation be undertaken. Proposed capacities and proposed area per student are included only for the three schools studied in depth. The column entitled "Estimated Cost of Rehabilitation Including Fees, Furniture, and Equipment" indicates the total expenditure anticipated to make the schools operational in the proposed manner. Foot notes indicate which schools are not typical and in what respect.

A commonly used "rule-of-thumb", outside of California, states that if rehabilitation cost exceeds 50% of replacement cost, rehabilitation should be given a second look and all questions carefully weighed before a final decision is made. In the past two to three years, this figure has been exceeded rather consistently because of enrollment pressure and other considerations. California's unique laws regarding structure adds approximately 25% to the "rule-of-thumb" practice because out of state school buildings are seldom rehabilitated structurally. The resultant rehabilitation versus replacement comparison shown on the chart (pages 44, 45) therefore compares favorably with practice nationally.

MISSION HIGH SCHOOL

Minimum Cost to comply with law (Includes required patching and design fees)	$ 699,851
Complete Rehabilitation	
Structural Work	531,193
Educational Rehabilitation	3,261,966
New Construction	1,525,760
Design Fees, Furniture & Equip.	1,063,784
Total Estimated Cost	$6,382,703

ROOSEVELT JUNIOR HIGH SCHOOL

Minimum Cost to Comply with law (Includes required patching and design fees)	$ 911,054
Complete Rehabilitation	
Structural Work	779,259
Educational Rehabilitation	772,003
New Construction	744,800
Design Fees, Furniture & Equip.	459,212
Total Estimated Cost	$2,755,274

JOHN MUIR ELEMENTARY SCHOOL

Minimum Cost to Comply with (Includes required patching and design fees)	$ 178,589
Complete Rehabilitation	
Structural Work	139,432
Educational Rehabilitation	681,766
Design Fees, Furniture & Equip.	164,238
Total Estimated Cost	$ 985,436

DATA COMPILATION

	YEAR BUILT	YEARS EXPANDED	DESIGNED CAPACITY	GROSS SITE AREA (SQUARE FEET)	AREA COVERED BY BUILDINGS (SQ. FT.)	1968 ENROLLMENT	1968 BUILDING AREA (SQUARE FEET)	1968 BUILDING AREA PER STUDENT (SQ. FT.)	1968 PLAYGROUND AREA PER STUDENT (SQ. FT.)	AREA PROPOSED DEMOLISHED (SQ. FT.)	AREA PROPOSED ADDED (SQ. FT.)	PROPOSED AREA FOR MAJOR REHABILITATION (SQ. FT.)	PROPOSED BUILDING AREA—TOTAL (SQ. FT.)	PROPOSED CAPACITY	PROPOSED AREA PER STUDENT (SQ. FT.)	FOOTNOTES
BALBOA	1928	'30,'31	2920	455,960	92,104	2300	214,700	93	158			110,400	214,700			6
GALILEO	1924	'27	3180	211,200	76,478	1850	240,000	129	73			155,600	240,000			6
MISSION	1924	'27	3450	227,993	92,352	2100	224,976	107	65		43,184	175,548	268,000	2700	100	
POLYTECHNIC	1912	'15,'29,'37	2720	139,484	77,566	1450	198,000	136	43	118,600	118,600		198,000			4,5,6
APTOS	1931	'37,'47	1878	119,890	54,745	1370	148,600	107	47		5,000	73,900	148,600			
EVERETT	1928		1763	183,279	58,064	1700	156,000	90	74		5,000	84,000	156,000			
FRANCISCO	1925	'26,'31,'60	1494	78,389	45,216	1100	109,734	87	30	4,200	18,000	43,400	109,734			5,7
HORACE MANN	1924	'40	1428	111,536	53,740	1375	120,300	67	42	8,000	25,000	45,100	120,300			5
JAMES LICK	1932		1134	127,680	34,513	1300	112,800	67	72		15,000	53,400	112,800			
PORTOLA	1910	'28,'40,'46,'51	1408	192,000	45,407	1260	122,200	98	116	29,200	25,000	51,500	122,200			4,7
PRESIDIO	1930		1461	144,000	47,741	1650	148,500	82	58		12,000	55,000	148,500			
ROOSEVELT	1930		1158	94,470	33,927	1020	123,062	100	50		21,280	34,176	123,062	1200	102	3
ALAMO	1926		945	60,000	22,268	750	47,100	63	50			32,142	47,100			3
ALVARADO	1926		945	79,247	21,310	700	51,300	73	83			37,518	51,300			
ANDREW JACKSON	1924		385	55,000	12,400	450	25,600	57	95			18,800	25,600			1
COMMODORE STOCKTON	1915	'24,'57,'58	840	75,560	33,438	1200	92,500	77	35	49,800	49,800	16,200	92,500			2,4,5,7
DUDLEY STONE	1926		1015	53,906	13,720	660	51,300	76	61			34,800	51,300			
EDISON	1927	'39	945	80,275	24,624	944	62,600	66	59			36,700	62,600			
EMERSON	1923		595	56,718	14,800	400	37,200	93	105			33,260	37,200			2,3
GEARY	1930		350	52,160	10,000	187	19,900	106	225			19,900	19,900			1
GRANT	1921		700	46,500	22,700	600	42,400	71	40			37,600	42,400			2,3,5
HAWTHORNE	1926		945	69,510	29,900	780	49,600	64	51			26,152	49,600			
JOHN MUIR	1928	'38	945	46,875	19,160	710	53,492	75	39			33,024	53,492	610	87	5
LAFAYETTE	1927		945	74,400	29,600	800	66,200	83	68			34,716	66,200			
LE CONTE	1926	'46	945	64,153	21,100	860	52,300	61	50			46,800	52,300			
RAPHAEL WEILL	1927	'37,'65	945	107,488	26,700	650	73,800	113	103			45,288	73,800			7
SANCHEZ	1927		945	72,921	25,950	855	56,200	66	55			41,100	56,200			
SHERMAN	1928		910	75,625	23,912	800	58,200	73	65			49,000	58,200			
SUNNYSIDE	1927		490	64,688	15,270	500	28,900	58	99			23,100	28,900			1
WEST PORTAL	1927	'32	840	118,313	25,550	785	48,900	62	118			39,300	48,900			
WINFIELD SCOTT	1930		630	75,625	18,500	500	33,900	68	114			26,394	33,900			

1. This school is too small to justify resource center required by assumed program. 2. Floor plan of this school contains single loaded cor[illegible]nd is not adaptable to flexibility requirements of new program. 3. Brick exterior walls and/or wood roof framing will require major structural work. 4. Estimates include demolition and new co[illegible]tion for sections requiring more than major structural corrections. 5. Site must be expanded to allow new program or new construction required for new program. 6. Estimate does not include [illegible]ctivity center, gymnasium, music facilities or resource center as proposed for Mission High School. 7. No work is anticipated in newer additions.

ESTIMATED COSTS

1958 TO 1968 IMPROVEMENT EXPENDITURE	1963 TO 1968 IMPROVEMENT EXPENDITURE	MINIMUM COST TO CONFORM (STRUCTURAL WORK, PATCH, REPAIR & DESIGN FEES)	STRUCTURAL EXPENSES INCLUDED IN REHABILITATION	REHABILITATION COST	REHABILITATION COST INCLUDING DESIGN FEES, FURNITURE & EQUIPMENT	PERCENTAGE OF REPLACEMENT COST	FEASIBILITY RECOMMENDATION	
$ 974,493	$ 540,131	$ 480,928	$ 322,050	$ 3,162,330	$ 3,794,796	40.8%		BALBOA
910,054	579,369	1,301,708	975,640	4,822,860	5,787,432	55.7		GALILEO
697,171	329,416	699,851	516,487	5,318,919	6,382,703	56.5		MISSION
1,284,541	719,141	5,417,776	4,408,600	4,699,884	5,639,860	66.0	NO	POLYTECHNIC
(3,866,259)	(2,168,057)	(7,900,263)	(6,222,777)	(18,003,993)	(21,604,791)			
		366,800	262,000	2,426,730	2,912,076	44.4		APTOS
416,921	173,157	512,400	381,250	2,506,800	3,008,160	44.2		EVERETT
288,190	168,202	275,217	211,230	1,792,030	2,150,436	45.3		FRANCISCO
397,059	59,578	346,500	268,125	2,156,945	2,588,335	49.7		HORACE MANN
494,555	20,560	373,542	284,620	2,231,720	2,678,064	51.7		JAMES LICK
1,027,744	109,938	1,558,480	1,512,730	2,219,420	2,663,304	52.2		PORTOLA
318,664	152,373	512,148	389,025	2,395,275	2,874,329	43.3		PRESIDIO
352,929	178,165	911,054	711,659	2,296,062	2,755,274	54.0		ROOSEVELT
(3,296,062)	(861,973)	(4,856,141)	(4,020,639)	(18,024,982)	(21,629,978)			
167,259	10,940	395,640	306,150	945,913	1,135,095	64.4		ALAMO
152,532	40,579	215,460	166,725	900,993	1,081,191	56.4		ALVARADO
180,010	20,623	97,484	74,240	452,800	543,360	56.7	NO	ANDREW JACKSON
460,427	214,091	1,378,809	1,222,980	1,517,820	1,821,384	46.5	NO	COMMODORE STOCKTON
225,258	92,584	215,460	166,725	990,125	1,188,149	61.6		DUDLEY STONE
117,916	27,360	262,920	203,450	1,004,331	1,205,197	51.5		EDISON
228,139	85,300	329,562	257,052	907,805	1,089,365	78.3	NO	EMERSON
104,669	6,200	75,779	57,710	419,890	503,868	67.7	NO	GEARY
247,603	55,204	375,630	292,984	1,032,804	1,239,364	78.1	NO	GRANT
199,802	61,873	208,320	161,200	783,354	940,024	50.7		HAWTHORNE
232,986	126,918	178,589	132,708	821,198	985,436	50.6		JOHN MUIR
152,111	14,271	278,040	215,150	389,047	1,186,857	47.9		LAFAYETTE
151,294	–	199,158	151,670	1,046,840	1,256,208	64.2		LE CONTE
633,014	470,755	264,936	205,400	1,120,779	1,344,935	57.7		RAPHAEL WEILL
225,750	93,586	236,040	182,650	1,003,120	1,203,744	57.3		SANCHEZ
159,287	–	221,625	168,780	1,148,895	1,378,673	63.3		SHERMAN
114,865	52,666	113,478	86,420	551,120	661,344	59.3	NO	SUNNYSIDE
208,804	11,850	205,380	158,925	942,115	1,130,539	61.8		WEST PORTAL
184,799	87,815	129,091	98,310	645,628	774,752	61.1		WINFIELD SCOTT
(4,146,525)	(1,472,615)	(5,381,401)	(4,309,229)	(17,224,577)	(20,669,485)			
$11,308,846	$4,502,645	$18,137,805	$14,552,645	$53,253,552	$63,904,254			

SYSTEMATIC APPROACH TO UPDATING

Just as a master plan for education is essential to determining the future of an individual school, so is a master, phased, and up-to-date building improvement program essential for each school before contracting expenditures in one particular department or area. None of the 31 schools in this study presently meet the structural requirements of the law, yet millions of dollars have been invested in them in recent years, including provisions to make them conform to fire and safety ordinances. This study represents one of the first attempts to ascertain the total needs of school buildings in relation to their educational program, before committing funds for any improvements. Some of the elementary schools, including John Muir, have new fluorescent lighting and acoustic tile, but others are just as they were built 40 or so years ago, except for periodic painting of plastered walls and ceilings. In the junior and senior high schools academic classrooms remain without treatment while vast funds are spent in non-conforming buildings in rehabilitating shop and home science areas, sometimes annexing adjacent academic classroom space to increase area. In three of the four high schools included in this study, over a million dollars has been spent on each for maintenance and minor remodeling in the last 10 years. Some is salvageable and some is not. Nearly a quarter of a million dollars was spent in the shop areas at Mission High School in 1965, so the only new work contemplated is patching and repairing after completion of required structural work, which will be considerable as all exterior walls housing shops must be replaced. Nearly one hundred thousand dollars was recently spent on the home science and chemistry laboratories, whose location must be changed to accommodate the proposed "house concept". Here, the new equipment can be effectively relocated.

Inasmuch as structural work with subsequent patching and repairs must occur in all areas of a building, it is strongly advocated that at this time all aspects of the existing environment be examined and replaced where necessary in order that the building can function as new. Knowledgeable people in the construction industry attest to the savings to be accrued when replacing major plumbing and electrical services while the building has been stripped and is unoccupied in contrast to trying to accomplish these same tasks in otherwise finished and occupied premises. In total perspective, it is unwise to accomplish these related tasks piece-meal as dictated by emergency or as funds become available.

Therefore, the cost estimates established in this study do include all new plumbing distribution and fixtures, new power distribution, new lighting, new heating, and ventilating systems (except boilers where they are relatively new), new acoustical treatment and floor covering, some new casework, and new partitions. In schools where new shop facilities have been recently installed, and in most gymnasiums, work contemplated is limited to structural conformity, patching and sometimes new more efficient lighting.

It was not possible to determine the escalation rate of maintenance and repair expenses on any of these 31 schools, but it can be assumed that when a building reaches an age of 40 or so years these expenses achieve major proportions. Obviously, these same expenses will be minimal following UPDATING. Thus, where maintenance and repair expenses mounted to nearly $6.00 per square foot of the four existing high schools over the last 10 years, nearly that same amount could be applicable to the cost of work contemplated under this study. If pro-rated over a period of 30 years, the remaining cost of UPDATING proposed becomes negligible in relation to the educational advantages gained.

There are additional areas that deserve full exploration before an UPDATING construction program commences:

—In order to realize the lowest possible construction cost, and to minimize disruption of the educational program, buildings planned for updating should, ideally, be vacated. Temporary reassignment of students to nearby schools or in available non-school buildings should be explored.

—Competitive bidding of one or several UPDATING projects as a package should be thoroughly considered in the interest of obtaining the best construction costs and to maximize work opportunities for San Francisco's building trades.

—The "systems approach" deserves thorough analysis. Such components as demountable partitions, heating and ventilating units, lighting fixtures, and casework, common to all projects, might be bid collectively, thus creating savings of time and money.

TYPICAL CLASSROOM, MISSION HIGH

REHABILITATED DOMESTIC SCIENCE
ROOSEVELT JUNIOR HIGH SCHOOL

CONCLUSIONS AND RECOMMENDATIONS

It is important to understand that the 31 schools studied in this report were selected by the District from among 130 existing facilities (some relatively new and some old and obviously beyond repair), because they are of reinforced concrete construction and therefore presumably receptive to UPDATING.

This report, therefore, addresses itself to the feasibility of UPDATING these 31 schools (1) PHYSICALLY, and (2) EDUCATIONALLY.

If it is initially determined that a school can be made to conform to the laws affecting its structure economically, then the feasibility of UPDATING revolves around what can be done to its outmoded design to create the kind of environment necessary to house today's and tomorrow's educational process.

The approaches to updating suggested in the three in-depth studies (Mission High, Roosevelt Junior High, John Muir Elementary) are intended to be broad enough in concept to allow many variations and innovations in the educational process in the future. In these approaches, flexibility and adaptability of spaces in the UPDATED schools replaces the inhibiting rigidity that presently exists.

The broad approach used in the three in-depth studies is also applied to the other 28 schools except that new areas are rarely proposed.

The chart on pages 44 and 45 indicates that 25 of the 31 schools assigned for study can be UPDATED, provided all work recommended is accomplished. Foot notes indicate the reasons why the six are not recommended for UPDATING.

Because these 31 schools were studied without benefit of a definitive Master Plan for Education in the San Francisco Unified School District, and because the report's authors have not studied the remaining 99 schools presently functioning, it is strongly recommended that this report's feasibility recommendations be re-examined and revised where necessary upon completion of a Master Plan for Education and review of the remaining schools.

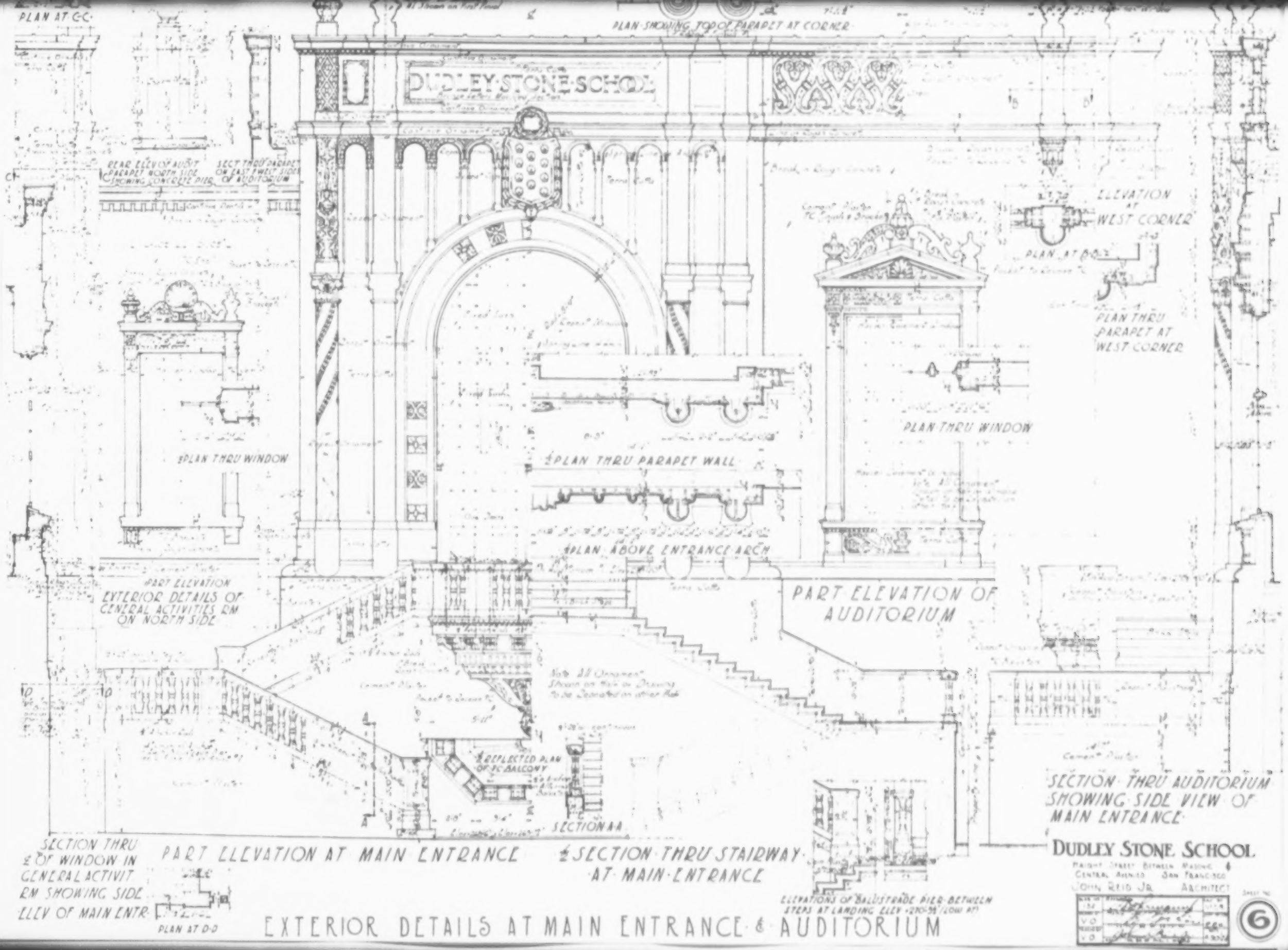
When the future role of each school is defined by the Master Plan for Education, all sites should be examined for expansion, a subject not covered by this report.

The authors of this feasibility study sincerely believe that UPDATING of the 25 schools recommended is achievable in an imaginative manner, devoid of any major compromises, and should be pursued vigorously.

Those of us responsible for the education of San Francisco's youth are not driving automobiles like those pictured below . . . why do we require students and teachers to function in buildings of the same vintage?

1930 – AUTOMOBILES IN FRONT OF ROOSEVELT JUNIOR HIGH SCHOOL

the end


PLAN AT C-C
PLAN SHOWING TOP OF PARAPET AT CORNER
DUDLEY STONE SCHOOL
REAR ELEV OF AUDIT PARAPET NORTH SIDE SHOWING CONCRETE PIER
SECT THRU PARAPET ON EAST & WEST SIDES OF AUDITORIUM
ELEVATION AT WEST CORNER
PLAN AT B-B
PLAN THRU PARAPET AT WEST CORNER
PLAN THRU WINDOW
PLAN THRU WINDOW
½ PLAN THRU PARAPET WALL
½ PLAN ABOVE ENTRANCE ARCH
PART ELEVATION
EXTERIOR DETAILS OF GENERAL ACTIVITIES RM ON NORTH SIDE
PART ELEVATION OF AUDITORIUM
½ REFLECTED PLAN OF TC BALCONY
SECTION A-A
SECTION THRU AUDITORIUM SHOWING SIDE VIEW OF MAIN ENTRANCE
SECTION THRU ℄ OF WINDOW IN GENERAL ACTIVIT RM SHOWING SIDE ELEV OF MAIN ENTR
PART ELEVATION AT MAIN ENTRANCE
½ SECTION THRU STAIRWAY AT MAIN ENTRANCE
ELEVATIONS OF BALUSTRADE PIER BETWEEN STEPS AT LANDING ELEV +270-9½ (LOW PT)
PLAN AT D-D
EXTERIOR DETAILS AT MAIN ENTRANCE & AUDITORIUM
DUDLEY STONE SCHOOL
HAIGHT STREET BETWEEN MASONIC & CENTRAL AVENUE SAN FRANCISCO
JOHN REID JR. ARCHITECT
SHEET NO
6

PICTURE CREDITS

Marshall L. Schultz. 3,11,13,27,36,37

Frank E. McClure. 5

Henry J. Degenkolb 4,5

Karl V. Steinbrugge 5

San Francisco Unified School District 34,35,39,42,47

Los Angeles Times 5

San Francisco Chronicle. . 5

Other pictures by Corlett and Spackman

OTHER REPORTS ON SCHOOL MODERNIZATION AVAILABLE

The following publications are available from the offices of EFL-New Life for Old Schools Study, Suite 1734, 20 North Wacker Drive, Chicago, Illinois 60606.

NEW LIFE FOR OLD SCHOOLS

Excerpts from a report originally published in June, 1965, on a workshop for representatives of the Great Cities in relation to the Spring, 1965 Conference of The Research Council of the Great Cities Program for School Improvement.

NEWSLETTER

A limited number of back issues of a school modernization Newsletter are available.

AWARDS

A report of the award winning designs in the architectural competition for the modernization of the Hyde Park High School, Chicago.

THE INTERMEDIATE SCHOOL

A report on the award winning designs for the conversion of New York City's Joseph H. Wade Junior High School to house an innovative educational concept.

PITTSBURGH DESIGN STUDIES

The Liberty Elementary School, The Wightman Elementary School. Reports of a cooperative study with the Pittsburgh Board of Education and the Department of Architecture, Carnegie Institute of Technology.

SPACE IS WHERE YOU FIND IT

A report on the feasibility of converting a non-educational building in Philadelphia to educational use. The concepts have application for any school district considering the use of loft-type buildings.

CHALLENGE

A report suggesting how an old school can continue to serve youth if the educational program is the prime consideration. The school studied is the Western High School in the District of Columbia.

NEW LIFE FOR OLD SCHOOLS – AN INTERIM REPORT

A 20-minute, sound, color motion picture showing examples of good school modernization currently completed or under construction.